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Fort Belvoir
Consolidated Utility Systems Privatization
Environmental Assessment

March, 2000

Attachment to Request For Proposal
for the Privatization of the
National Capital Region
Utility Distribution and Collection Systems
Solicitation DACA31-00-R-0026

Note: This file includes text only for the Draft Environmental Assessment for the Ft. Belvoir UDC Systems Privatization. Information for Appendix A – Agency Coordination, Appendix B – General Installation Maps, and Appendix C – UDC System Maps is provided as a separate file attachment to this Solicitation.

Prepared By:
U.S. Army Corps of Engineers
Baltimore District

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EXECUTIVE SUMMARY

Introduction

This Environmental Assessment (EA) examines the proposed privatization of selected utility distribution and collection (UDC) systems at Fort Belvoir, Fairfax County, Virginia, following the Department of Defense (DoD) and Department of the Army (DA) directives and guidance to military installations. DoD and DA envision that the Government will be able to divest itself of the ownership and responsibility to operate and maintain UDC systems on military installations by contracting with a non-Federal entity. The Military District of Washington (MDW) has decided to pursue this privatization initiative by grouping selected UDC systems at each of its five installations in the National Capital Region (NCR), and combining all grouped systems into one public solicitation. At Fort Belvoir, the utilities selected for the grouped contract are the electric, water and wastewater (Belvoir UDC) systems. Fort Belvoir's natural gas distribution system has already been privatized. MDW's decision to group the NCR UDC systems for privatization is the result of preliminary market research and conditions inventories at each of the five installations. These investigations have led to the conclusion that the responsibility to own, operate, and maintain unprofitable or marginally profitable systems would not be enticing to a non-Federal entity without proper incentives. The best incentive that MDW has envisioned, maximizing the extent of privatization, is to group all types of UDC systems from a number of locations into one package that combines the more potentially profitable utility systems with the less potentially profitable systems.

Actions Analyzed

Three alternatives were considered for this project. Alternatives for the proposed action include (1) Privatization Restricted to the Current Alignments of the Belvoir UDC Systems, (2) Unrestricted Privatization of the Belvoir UDC systems, and (3) the No-Action alternative.

Alternative 1 would privatize the Belvoir UDC systems by means of fee simple transfer of current real property infrastructure to the non-Federal entity via a Bill of Sale or deed transaction. Additionally, an easement would be granted to the same entity for means of access along the current utility alignments, and a 10 to up to 50-year utility services contract would be awarded to transfer responsibility for maintenance and operation of these systems from the Government to the successful non-Federal entity. Adoption of Alternative 1 would restrict the non-Federal entity from proposing infrastructure construction and improvement activities outside the limits of the easement granted; therefore, no new work could be conducted on lands that potentially have not already or recently been disturbed by human activities. It should be noted that adoption of Alternative 1 would allow the non-Federal entity to proceed expeditiously with infrastructure improvement activities within the limits of the easements to be granted upon contract award. However, possible monetary and operational efficiencies that could be achieved by the realignment of obsolete utility lines would not be realized. The potential benefit of initial project timesaving is not expected to outweigh these considerable opportunity costs.

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Alternative 2 would privatize the Belvoir UDC systems as in Alternative 1 above, except that no restrictions would be placed on the non-Federal entity to propose infrastructure construction or improvement activities outside the limits of easements to be granted for existing UDC systems. The non-Federal entity would be responsible to operate and maintain the UDC systems to industry or other standards as prescribed in the utility service contract. Should the non-Federal entity propose to replace part or all of an existing UDC system or systems, by realignment or relocation outside of the easement to be granted at contract award, the non-Federal entity would be responsible for all associated environmental compliance, permits, installation approvals, and local regulatory requirements. The non-Federal entity must fund these associated activities and complete them prior to initiation of any physical work. Adoption of Alternative 2 would allow the most unrestricted competition among offerors, encouraging the submission of proposals with the most efficient and cost-effective infrastructure improvement plans to serve the current and expected installation utility service needs. As Alternative 2 best positions MDW and Fort Belvoir to be able to pursue DoD and DA UDC system privatization goals, it is designated as the preferred action alternative.

Alternative 3, the no-action alternative, is the baseline against which the proposed action was evaluated, as prescribed by Council on Environmental Quality (CEQ) regulations. The baseline established to evaluate the environmental and socioeconomic effects of the proposed action would be the conditions at Fort Myer in the absence of the proposed action. Adoption of the no-action alternative would continue the Government's present ownership and responsibilities to operate and maintain the existing UDC systems. Maintenance and operational trends would most likely remain the same. This alternative would not satisfy the need to provide near-term capital improvements to existing systems in poor condition, nor would it comply with DoD and DA policy on obtaining cost-effective and efficient utility services. Therefore, this alternative is not preferred.

Environmental and Socioeconomic Consequences

Table ES-1 shows the expected impacts for the preferred action and no-action alternatives analyzed in detail in this EA. The following paragraphs provide additional information on expected impacts. The proposed action to privatize the ownership, operation and maintenance of the Myer UDC systems would not be expected to have any significant adverse effects on any environmental resources or socioeconomic conditions on this installation. Furthermore, the proposed action would not be expected to significantly change the overall mission of Fort Myer, or by itself lead to an increase, decrease, or change in the number or types of tenants on the installation.

Granting utility easements and transferring the real property infrastructure would be expected to result in minimal cumulative physical, biological or chemical effects on any resource of the installation, and on installation command or mission. The only foreseeable effects of the proposed action on these resources are secondary and short-term, specifically as a result of potential future excavation and construction activities by the non-Federal entity or its subcontractors that would be associated with repairing, upgrading or constructing new UDC systems. The following segments address these potential effects.

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Potential utility infrastructure improvements, including expansion, repair or upgrade of the UDC systems, would most likely have minimal impact on air, land and water resources. These effects are not likely to be large, either singly or cumulatively. Additionally, restrictions and conditions incorporated into the easement would require special care and responsibilities for environmentally sensitive areas, mitigating any foreseeable impacts to (1) water supply and quality, (2) prime farmland soils, (3) forest conservation areas, (4) aquatic resources, (5) wetlands, (6) threatened and endangered species, and (7) cultural resources. This reduction of the impact of each part of the proposed action would reduce the overall cumulative impact of all foreseeable activities within reasonable limits. The non-Federal entity would be responsible for ensuring that future construction, maintenance, and upgrades of the utilities comply with all applicable Federal and state environmental laws and regulations.

Regulatory Requirements

Compliance with Federal environmental regulations would be required before the project analyzed in this EA could be initiated. The status of environmental compliance for the installation is summarized in Table ES-2.

Conclusions

Upon reviewing the EA and other information, implementing the preferred alternative for the proposed action addressed in this EA would not significantly alter baseline environmental or socioeconomic conditions. Because the proposed action would not have a significant effect on the quality of the human environment, no environmental impact statement will be prepared, and a Finding of No Significant Impact will be published in accordance with 40 Code of Federal Regulations (CFR) 1500 and Army Regulation (AR) 200-2.

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Table ES-1. Summary of Effects of Proposed Actions and Alternatives		
Resource	Proposed Action	No-Action Alternative
Land Use	No Impact.	No Impact.
Geology	No Impact.	No Impact.
Soils	Minor Temporary Impacts.	No Impact.
Topography and Drainage	Minor Temporary Impacts.	No Impact.
Climate	No Impact.	No Impact.
Air Quality	Minor Temporary Impacts.	No Impact.
Surface Water	No Impact.	No Impact.
Groundwater	No Impact.	No Impact.
Aquatic Resources and Wetlands	No Impact.	No Impact.
Vegetation	Minor Temporary Impacts.	No Impact.
Wildlife Resources	Minor Temporary Impacts.	No Impact.
Threatened and Endangered Species	No Impact.	No Impact.
Prime and Unique Farmlands	No Impact.	No Impact.
Wild and Scenic Rivers	No Impact.	No Impact.
Archeological Resources	Minor Temporary Impacts.	No Impact.
Architectural Resources	Minor Temporary Impacts.	No Impact.
Hazardous, Toxic and Radioactive Substances	Minor Temporary Impacts.	No Impact.
Electric	Minor Temporary Impacts.	Possible Impacts.
Potable Water	Minor Temporary Impacts.	Possible Impacts.
Wastewater	Minor Temporary Impacts.	Possible Impacts.
Telecommunications	No Impact.	No Impact.
Solid Waste	No Impact.	No Impact.
Stormwater	No Impact.	No Impact.
Traffic and Transportation	Minor Temporary Impacts.	No Impact.
Demographics	No Impact.	No Impact.
Economics	Minor impacts.	No Impact.
Housing	No Impact.	No Impact.
Schools, Libraries and Recreational Facilities	No Impact.	No Impact.
Public Health and Safety	Minor Temporary Impacts.	Possible Impacts.
Noise	Minor Temporary Impacts.	No Impact.
Visual and Aesthetic Values	Minor Temporary Impacts.	No Impact.
Environmental Justice	No Impact.	No Impact.

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Table ES-2. Compliance with Federal Environmental Statutes and Executive Orders^a	
Acts	Compliance^b
Anadromous Fish Conservation Act	FULL
Clean Air Act, as amended (Public Law 88-206)	FULL
Clean Water Act, as amended (Public Law 95-217)	FULL
Coastal Barrier Resources Act	FULL
Coastal Zone Management Act	FULL
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986	FULL
Endangered Species Act of 1973, as amended (Public Law 93-205)	FULL
Estuary Protection Act	FULL
Federal Water Project Recreation Act	FULL
Fish and Wildlife Coordination Act, as amended (16 United States Code [U.S.C.] 661, et seq.)	FULL
Land and Water Conservation Fund Act	FULL
Marine Mammal Protection Act	FULL
Magnuson Fishery Conservation and Management Act, as amended (Public Law 94-265)	FULL
National Environmental Policy Act of 1969 (Public Law 91-190)	Ongoing
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	Ongoing
Noise Control Act of 1972, as amended	FULL
Resource Conservation and Recovery Act (Public Law 94-580)	FULL
Rivers and Harbors Act	FULL
Safe Drinking Water Act, as amended (Public Law 93-523)	FULL
Solid Waste Disposal Act of 1965, as amended	FULL
Toxic Substances Control Act of 1976 (Public Law 94-469)	FULL
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. 1101, et seq.)	FULL
Wetlands Conservation Act (Public Law 101-233)	Ongoing
Wild and Scenic Rivers Act	FULL
^a Applies to all alternatives. ^b Ongoing--Some requirements of the regulation remain to be met before implementing some activities. Full compliance is expected.	

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Table ES-2, continued Compliance with Federal Environmental Statutes and Executive Orders^a	
Executive Orders	
Flood Plain Management (Executive Order 11988)	FULL
Protection of Wetlands (Executive Order 11990)	Ongoing
Federal Compliance with Pollution Standards (Executive Order 12088)	FULL
Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898)	FULL
Invasive Species (Executive Order 13112)	FULL
^a Applies to all alternatives.	
^b Ongoing--Some requirements of the regulation remain to be met before implementing some activities. Full compliance is expected.	

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1.0 PURPOSE, NEED AND SCOPE

1.1 Background

The great majority of the nation's military installations contain Government owned, operated and maintained utility distribution and collection (UDC) systems. In many instances, funding for maintenance and operation of UDC systems has not kept pace with the functional needs of these systems, especially those that have exceeded or are now approaching the end of their expected useful life. Privatization of the UDC systems on military installations entails the transfer of infrastructure ownership, operation, maintenance, repair and replacement responsibilities from the Government to a private or public sector utility services provider. Privatization of the UDC systems is envisioned as the means for the military services to obtain the most efficient and effective delivery of utility services to standards applicable and prescribed for systems in the private sector. Privatization of UDC systems would allow the military services to redirect specific manpower resources to meet the critical needs of its core war fighting, training, support, and readiness missions.

Congressional legislation and subsequent Department of Defense (DoD) Defense Reform Initiatives Directives (DRIDs) and Department of the Army (DA) implementation policies directed that military installations pursue privatization of all their UDC systems. Enacted in November 1997, the National Defense Authorization Act for Fiscal Year 1998 (10 U.S.C. 2688) provided authority to the Secretary of a military department to convey a utility system, or part of a utility system, under the jurisdiction of the Secretary, to a municipal, private, regional, district, or cooperative utility company or other entity. The conveyance may consist of all right, title and interest of the United States in the utility system or such lesser estate, as the Secretary considers appropriate, to serve the interests of the United States. DoD issued Defense Reform Initiative Directive (DRID) #9, Privatizing Utility Systems, on 10 December 1997. DRID #9 directed the military services to develop plans to privatize all applicable UDC systems by 1 January 2000. In subsequent DRID #49, issued on 23 December 1998, DoD relaxed the privatization deadline to 2003 for the great majority of military installations where privatization efforts had not yet been undertaken. Exceptions were strictly limited to those cases where a particular UDC system must be maintained for unique national security reasons or where privatization of a particular UDC system is ultimately determined to be uneconomical.

Following DA policy for implementing these DRIDs, the U.S. Army Military District of Washington (MDW) is seeking to privatize thirteen (13) selected UDC systems at its five (5) installations in the National Capital Region (NCR) by the end of September 2000. MDW's five installations in the NCR are Fort Lesley J. McNair, located in Washington, D. C.; Fort George G. Meade, located in Maryland; and Fort Myer, Fort Belvoir, and Fort A.P. Hill, all located in Virginia.

This Environmental Assessment (EA) was being prepared to address the environmental and socio-economic impacts of the proposed action to privatize, as a group, the electric, water and wastewater UDC systems at Fort Belvoir (Belvoir UDC Systems). Fort Belvoir's natural gas system has already been privatized. Fort Belvoir is located in Fairfax County, Virginia, and consists of two areas, the Main Post and the Engineer Proving Ground (EPG). UDC systems on

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EPG are specifically excluded from the scope of the proposed action, and are not considered in this EA. The Main Post is situated along the western shore of the Potomac River, about 85 miles (137 km) upstream of the mouth of the Chesapeake Bay (Appendix B: Figure 1). The 7,836-acre (3,171-hectare) Main Post lies east of Interstate 95, north of Pohick Bay and Gunston Cove, west of the Potomac River and Dogue Creek, and south of Telegraph Road. The Main Post is bisected by US Route 1 (Temporary Relocation of the Defense Threat Reduction Agency EA, Fort Belvoir, Virginia, March 2000).

1.2 Purpose of and Need for the Proposed Action

The purpose of the proposed action is to transfer infrastructure ownership from the Federal Government to a non-Federal entity, conveying responsibility to renovate, repair, replace, operate and maintain these systems to prescribed industry standards, common in the private sector. The physical condition of one or more of the UDC systems at Fort Belvoir is such that all or parts of the systems are approaching or have exceeded their expected useful life. Funding for maintenance, repair and upgrade of these systems provided by DA over the years has generally not kept pace with the need to adequately maintain the infrastructure integrity and reliability of these systems.

MDW and Fort Belvoir seek to implement the proposed action by means of best value competitive award of a contract to a successful, non-Federal offeror. The utility service contract, issued in accordance with the current Federal Acquisition Regulation (FAR) statute and recent Congressional legislation for a period of up to fifty (50) years, would prescribe the performance standards for the operation, repair, maintenance and replacement of the Belvoir UDC systems. Additionally, in conjunction with the award of this contract, two real estate contracts would complete the privatization of these UDC systems. The ownership of the UDC systems' infrastructure would be transferred in full by deed or bill of sale to the successful offeror. To allow the successful offeror access to the infrastructure to accomplish work under the service contract, the Federal Government would grant easements to the land immediately surrounding the existing UDC systems.

MDW, as the major Army command ultimately responsible for overseeing all activities at Fort Belvoir and the sponsor of the recent utility privatization studies for the command, has proposed consolidating the privatization of thirteen (13) selected UDC systems at its five NCR installations as the best means for implementing DoD and DA privatization policy. The three (3) Belvoir UDC systems would be included in this grouping as part of the overall MDW privatization initiative. One or more of the UDC systems at Fort Belvoir, if pursued separately for privatization, might not be economically viable for takeover by prospective offerors given the specifics of the systems' present condition, routing, and customer base. The utility systems located at the other four NCR installations, presumed to possess equal or greater potential profitability, would be combined with these systems, envisioned as having less potential profitability. Although the systems at Fort Belvoir might require more resources than can be gained, the overall benefits of the consolidated project would entice offerors to accept this partial loss. By implementing this innovative approach to privatization, MDW seeks to cultivate an apparent, growing competitive interest in the non-Federal sector for this potential business

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opportunity, setting an example for more than 1000 potentially applicable UDC systems DoD-wide.

1.3 Scope of Analysis

This EA was developed in accordance with the National Environmental Policy Act (NEPA), implementing regulations issued by the Council on Environmental Quality (CEQ), and Army Regulation (AR) 200-2, *Environmental Effects of Army Actions*. Its purpose is to inform decision-makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

The EA identifies, documents and evaluates the potential environmental and socioeconomic effects associated with the proposed action to implement DoD and Army privatization policy at Fort Belvoir. Section 2.0 describes the proposed action. Section 3.0 sets forth alternatives to the proposed action, including the no-action alternative, and explains why certain alternatives will not be evaluated in detail. Section 4.0 describes the existing environmental conditions at Fort Belvoir that fall within the scope of this EA. Section 5.0 describes the environmental and socioeconomic consequences envisioned by adoption of either the proposed action or the no-action alternative. Section 6.0 presents the conclusions and findings.

An interdisciplinary team of Government environmental scientists, biologists, ecologists, planners, economists, engineers, historians, and military technicians has reviewed the proposed action and the alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The EA focuses on effects likely to occur within the area of proposed action (i.e., the installation boundaries). The document analyzes direct effects (those resulting from the proposed action and occurring at the same time and place) and indirect effects (those resulting from the proposed action and occurring later in time or those farther removed in distance, but still reasonably foreseeable). The potential for cumulative effects is also addressed, and mitigation measures are identified where appropriate.

1.4 Public Involvement

Fort Belvoir invites public participation throughout the NEPA process. Consideration of the views and information of all interested persons promotes open communications and enables better decision-making. All agencies, organizations and members of the public having a potential interest in the proposed action are urged to participate.

Public participation opportunities with respect to the proposed action evaluated in this EA are guided by AR 200-2, *Environmental Effects of Army Actions*. Upon final review and concurrence with this environmental assessment's findings that the proposed Federal action would not be expected to result in significant environmental effects, Fort Belvoir would issue a Finding of No Significant Impact (FNSI). The public and concerned organizations would be informed of the FNSI and the availability of the EA by the publishing of a Notice of Availability (NOA) in local newspapers. For a period of thirty (30) days, starting with the day that the NOA is advertised, concerned organizations and the public would be encouraged to submit comments on the proposed action, the EA, and the FNSI. Work on the proposed action will not commence until this timeframe is observed and any resulting issues resolved. At any point in the process, the

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public may obtain information on the status and progress of the proposed action and the EA by contacting the U.S. Army Corps of Engineers, Baltimore District, Planning Division point of contact Mr. David Hand, telephone (410) 962-8154.

1.5 Framework for Analysis

A decision on whether to proceed with the proposed action rests on numerous factors, such as (1) the Army's changing mission requirements, (2) the receipt, evaluation, and acceptance of qualified proposals by prospective non-Federal offerors and ultimately the award of a contract(s) to a successful offeror(s), (3) availability of Army funding, (4) determination of economic viability, and (5) environmental considerations. In addressing environmental considerations, MDW and Fort Belvoir are guided by several relevant statutes and regulations, and by Executive Orders that establish standards and provide guidance on environmental and natural resource management and planning. These include the Clean Air Act, Clean Water Act, Endangered Species Act, Farmland Protection Policy Act, National Historic Preservation Act, Resource Conservation and Recovery Act, Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), Executive Order 12088 (Federal Compliance with Pollution Control Standards), Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), and Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks). Where useful to better understanding, key provisions of these statutes and Executive Orders are described in more detail in the text of the EA. Table 1-1, provided below, summarizes the installation's current compliance status with these environmental statutes and Executive Orders.

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Table 1-1. Compliance with Federal Environmental Statutes and Executive Orders^a	
Acts	Compliance^b
Anadromous Fish Conservation Act	FULL
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Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986	FULL
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Fish and Wildlife Coordination Act, as amended (16 United States Code [U.S.C.] 661, et seq.)	FULL
Land and Water Conservation Fund Act	FULL
Marine Mammal Protection Act	FULL
Magnuson Fishery Conservation and Management Act, as amended (Public Law 94-265)	FULL
National Environmental Policy Act of 1969 (Public Law 91-190)	Ongoing
National Historic Preservation Act of 1966, as amended (Public Law 89-665)	Ongoing
Noise Control Act of 1972, as amended	FULL
Resource Conservation and Recovery Act (Public Law 94-580)	FULL
Rivers and Harbors Act	FULL
Safe Drinking Water Act, as amended (Public Law 93-523)	FULL
Solid Waste Disposal Act of 1965, as amended	FULL
Toxic Substances Control Act of 1976 (Public Law 94-469)	FULL
Watershed Protection and Flood Prevention Act of 1954 (16 U.S.C. 1101, et seq.)	FULL
Wetlands Conservation Act (Public Law 101-233)	Ongoing
Wild and Scenic Rivers Act	FULL
^a Applies to all alternatives. ^b Ongoing--Some requirements of the regulation remain to be met before implementing some activities. Full compliance is expected.	

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Table 1-1, continued Compliance with Federal Environmental Statutes and Executive Orders^a	
Executive Orders	
Flood Plain Management (Executive Order 11988)	FULL
Protection of Wetlands (Executive Order 11990)	Ongoing
Federal Compliance with Pollution Standards (Executive Order 12088)	FULL
Environmental Justice in Minority Populations and Low-Income Populations (Executive Order 12898)	FULL
Invasive Species (Executive Order 13112)	FULL
^a Applies to all alternatives.	
^b Ongoing--Some requirements of the regulation remain to be met before implementing some activities. Full compliance is expected.	

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2.0 PROPOSED ACTION

MDW and Fort Belvoir propose to implement DoD and DA directives and policy to fully privatize its electric, water and wastewater UDC systems at Fort Belvoir. Currently, operation and maintenance responsibilities for these UDC systems are contracted to a private entity. Full privatization of the Belvoir UDC systems would be carried out through two steps, a real estate transaction and a service contract. The real property assets associated with the UDC systems infrastructure would be transferred to a non-Federal entity through a bill of sale or deed and access to the land on which the real property is situated would be granted to the same non-Federal entity by a perpetual easement. Additionally, a 10 up to 50-year utility service contract would be awarded in accordance with the current FAR and recent Congressional legislation. MDW and Fort Belvoir seek one qualified non-Federal entity, regulated or unregulated, to own, operate and maintain the Belvoir UDC systems. MDW has arranged with the Baltimore District, U.S Army Corps of Engineers, to be the contracting agent for implementing the proposed action.

Implementation of the proposed action would represent the Government's preferred alternative for privatization of its Government-owned UDC systems at Fort Belvoir. Other alternatives are presented in Section 3.0.

This EA was prepared to describe the environmental and socioeconomic impacts of the proposed action to privatize UDC systems at Fort Belvoir. The relevant, current environmental conditions of the real property that would be transferred and the land associated with the known easement areas that would be discussed are discussed herein. Upon contract award, it would become the responsibility of the non-Federal entity to initiate action to bring all UDC systems into compliance with the general and specific industry performance standards to be identified in the contract. It is important to note that the non-Federal entity would be permitted to propose replacement of all or parts of one or more existing UDC systems, or the installation of new or extended utility services during the term of the contract, to be run in alignments outside the easement limits issued at time of contract award. A very general discussion of the potential impacts of such proposals is included in this EA as part of the Cumulative Impacts in Section 5.9. It would be incumbent, however, on the non-Federal entity to perform or obtain, at his expense, any necessary studies, assessments and documentation and approvals required from the installation and other agencies prior to initiating any work outside the areas covered in this EA. This would include executing activities to comply with NEPA, and other Federal, state and local government laws, codes and regulations, including permits. Clauses, conditions and restrictions in the real estate documents and the utility service contract would be included to assure that the non-Federal entity is held responsible and accountable for his actions.

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3.0 ALTERNATIVES

The Government has identified two alternatives for its proposed action, as well as the no-action alternative. These alternatives are discussed below.

3.1 Privatization Restricted to the Current Alignments of the Belvoir UDC Systems

Under this alternative, the Government would implement privatization of its Belvoir UDC systems described under the proposed action, but would restrict the non-Federal entity to effect repair, rehabilitation, replacement or other infrastructure improvements to the UDC systems as currently aligned and within the easements to be issued upon contract award.

The Government has determined that adoption of this alternative would unduly restrict potential offerors from proposing what they determined to be the most efficient and economic means to improve existing infrastructure. Offerors would be precluded from proposing relocated or new routes for UDC systems outside the limits of easements to be granted based on current UDC system alignments. MDW and Fort Belvoir believe that, given the opportunity, offerors would consider proposing new or relocated UDC systems alignments, especially for those systems considered in need of total or major replacement. One goal of the privatization process is to maximize infrastructure upgrades or other improvements as part of achieving efficient, safe reliable utility service to installation customers at the lowest cost. Most importantly, proposals to conduct work outside the existing utility routes would be considered under the proposed action, a newly proposed action that would require its own process to comply with NEPA and other environmental laws and regulations. Safeguards, in the form of contract clauses and easement conditions and restrictions, requiring the privatization entity to be responsible for this compliance work would be placed in the appropriate proposed action documentation. For these reasons, this alternative is not reasonable at this time and not ripe for examination further in this EA.

3.2 Unrestricted Privatization of Belvoir UDC Systems

Implementation of the proposed action, as described in Section 2.0, would represent the Government's preferred alternative for privatizing its remaining three UDC systems under Government control at Fort Belvoir. Accordingly, the environmental and socioeconomic consequences of the preferred alternative are evaluated in detail in Section 4.0 of this document.

3.3 The No-Action Alternative

This document refers to the continuation of existing conditions of the affected environment, without implementation of the proposed action, as the no-action alternative. The Council on Environmental Quality requires inclusion of the no-action alternative. The no-action alternative serves as the baseline against which the proposed action and alternatives can be evaluated.

Under the no-action alternative, the Government would retain ownership of the three remaining UDC systems at Fort Belvoir and would continue to be responsible through its Directorate of Installation Support (DIS) workforce for overseeing the contract with the current provider of

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operation and maintenance services. Maintenance and operational practices would most likely remain the same. Fort Belvoir would continue to obtain funding for the management of the utility systems through the Congressional authorization and appropriations process. Any major changes to or construction of utility improvements would require that appropriate NEPA analyses are completed prior to implementing such actions.

Selecting the no-action alternative would not satisfy the need to provide immediate capital improvements to those existing systems or portions of systems in poor condition. Furthermore, it would not comply with DoD directives and Army policy to privatize UDC systems. Therefore, the no-action alternative is not preferred.

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4.0 AFFECTED ENVIRONMENT

4.1 Project Area Description

4.1.1 Land Use

Local land uses outside of the installation are predominantly residential, although commercial and industrial development, such as the Newington Industrial Park and a number of retail malls, occur along US Route 1 and near Interstate 95. Locally there are a number of sizable tracts in public ownership, including Huntley Meadows County Park, Pohick Bay Regional Park, Washington Grist Mill, Mount Vernon estate and Mount Vernon Parkway, Gunston Hall Plantation, Mason Neck National Wildlife Refuge, and Mason Neck State Park. Many of these tracts occur along the Potomac River, resulting in a fairly continuous band of natural riparian habitat along the river and its tributaries.

Fort Belvoir functions as an administrative and logistics center for the U. S. Army Military District Washington. Appendix B, Figure 2 (Existing Land Use for Fort Belvoir Sites) shows land use features. The “unimproved” category depicted in the summary of existing land use patterns provided in Table 4-1 below includes considerable areas of wetlands, forest, and riparian forest, much of which has been preserved as wildlife corridors and refuges. Fort Belvoir also has nearly 11 mi (18 km) of mostly undeveloped shoreline. Fort Belvoir contains 7,837 acres of land between the Potomac River and upland to the west. The total land area includes 167.5 acres of land in leases, 346.0 acres in permits, and 88.3 acres in easement areas (DTRA, 2000).

Table 4-1: General Land Uses

LAND USE CATEGORY	DESCRIPTIONS	APPROXIMATE ACREAGE (acres/hectares)
Improved	Roads, walkways, parking lots, golf courses, and areas adjacent to buildings – all requiring intensive maintenance.	4,856/1,965
Semi-Improved	Areas that require periodic maintenance - primarily weed and brush control.	646/261
Unimproved	Natural areas requiring minimum maintenance.	3,154/1,276

SOURCE: Temporary Location of the Defense Threat Reduction Agency EA, Fort Belvoir, Virginia, March 2000

Specific uses throughout the installation vary, but include administrative, research and development, medical, community facilities, housing (troop and family), service and storage,

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recreation, and training. Certain undeveloped areas are considered environmentally sensitive, and are used for compatible forms of recreation.

4.1.2 Geology

Fairfax County lies within the Upper Coastal Plain and Northern Piedmont physiographic provinces. The topography at Fort Belvoir has been influenced by the combination of the two physiographic provinces and by the effects of dissection by rivers and streams.

The Coastal Plain Physiographic Province consists of unconsolidated sand, silt, and clay underlain by residual soil and weathered crystalline rocks. Most of the Coastal Plain Physiographic Province deposits in the Fort Belvoir area consist of a sequence of unconsolidated Cretaceous sediments that belong to the Potomac Group (Larson and Froelich, 1977, in: Horne Engineering, 2000). These sediments consist of predominantly lenticular deposits of sand, silt, clay, and gravel and are characterized by abrupt changes in rock formation. The Potomac Group represents an ancient river environment that is approximately 400-ft (122- m) thick beneath most of Fort Belvoir (Woolpert, 1993/DTRA, 2000).

An irregular physiographic, boundary (the Fall Line) separates the Piedmont Province on the northwest from the Atlantic Coastal Plain on the southeast. This line trends northeast to southwest and parallels 1-95 near Fort Belvoir. The Post (excluding EPG), therefore, lies entirely in the Atlantic Coastal Plain Province. The Post is situated on a wedge-shaped unit of unconsolidated Cretaceous sediments (the Potomac Group) comprising much of the Atlantic Coastal Plain of southeastern Fairfax County (RPMP, 1993).

Major fault systems appear to be tectonically influenced as determined by regional configurations and river deflections. The Stafford Fault System extends into Fort Belvoir and the EPG. This system consists of a series of northeast-trending, high-angle, reverse faults parallel to the fault line. No evidence exists of recent geological disturbances in the Fort Belvoir area (USACE, 1991).

4.1.3 Soils

The USDA Natural Resources Conservation Service (NRCS – formerly the Soil Conservation Service, or SCS) identified and mapped Fort Belvoir's soils in 1982 (USDA SCS, unpublished). Soils maps showing the distribution of the installation's 22 soils series are available from the Fort Belvoir Directorate of Installation Support, as well as the installation's Geographic Information System (GIS) (DTRA, 2000).

The soils of Fort Belvoir and the surrounding vicinity were formed from metamorphic rock (granite gneiss and quartz sericite schist). Sedimentary deposits are of fluvial and marine origin. Many of these sedimentary soils have a **fragipan** that results in slow water drainage. Sedimentary soils occupy the broader ridgetops with slopes of less than 10 percent (USACE, 1991).

Coastal Plain sand, silt, clay, and gravel of marine or fluvial origin comprise the High Coastal Plain. Accotink Creek is the primary drainage source into the Potomac River; slowly permeable,

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gravelly soils are found within this region. Young marine deposits of highly stratified and mixed sand, silt, gravel, and clay are found in the Low Coastal Plain terrace.

The Fort Belvoir soil survey has ranked the Post's soils as "slight," "moderate," and "severe" with respect to the degree of difficulty they present in building site development. Soils classified by the soil survey as "severe" present constraints that are so unfavorable or difficult to overcome that special design work, significant costs in the cost of construction, and increased maintenance work are necessary. Soils with the greatest potential of presenting problems related to the construction of buildings and roads on Fort Belvoir are generally located along streams and creeks, as well as along the shores of Pohick Bay, Accotink Bay, Gunston Cove, and the Potomac River. Severe limitations to construction include cutbank cave-ins, wetness, flooding, frost action related to the seasonally high water table, shrink-swell related to clay content, and slope (RPMP, 1993).

4.1.4 Topography and Drainage

The land features on the installation are a function of the physiographic provinces and range from smooth uplands to bluffs and V-shaped valleys that rise from the floodplain and include well- to moderately-drained uplands and well- to poorly-drained lowlands. Elevations range from less than 1 foot above mean sea level (msl) along the shorelines on the east and south to 230 feet above msl along Beulah Street between Woodlawn Road and Snyder Road, as shown on Figure 3, Appendix B (USACE, 1991).

The topography between the High Coastal Plain and Low Coastal Plain is hilly and steep along the large streams. Drainage is generally to the southeast and is well developed. Accotink Creek is the primary drainage source into the Potomac River. Slowly permeable, gravelly soils are found within this region.

The Low Coastal Plain terrace is mostly level and gently rolling with some hilly areas near the large creeks and rivers; drainage patterns are not well developed in this area (USACE, 1991).

4.1.5 Climate

Fort Belvoir is located in the transition zone between the northern and southern climates of the U.S. In this zone, winter temperatures range from the 20s to the 40s, and summer temperatures range from the low 60s to the upper 80s. October usually brings the first frost, and the last freezing temperatures occur during April.

Average annual precipitation is 37 inches; the majority of rain falls during the summer months when low-pressure systems move up the East Coast. Snowfalls of 3 inches or more occur two to three times a year.

The prevailing winds in the area come from the southwest during the summer and the northwest during the winter (RPMP, 1993).

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4.2 Air Quality

Fairfax County (including Fort Belvoir), along with Loudoun and Prince William counties, comprises the Virginia Department of Air Pollution Control (DAPC) Region VII. Region VII is part of the National Capital Interstate Air Quality Control Region (AQCR). Air quality is monitored routinely by the DAPC for those pollutants regulated by the state and federal Clean Air Acts. The Commonwealth of Virginia has adopted ambient air standards to regulate emissions of these pollutants.

Generally, air quality within Region VII is considered good. However, the entire National Capital Interstate AQCR is designated as nonattainment for ozone (O₃). The Environmental Protection Agency (EPA), is also considering designating Region VII as nonattainment for carbon monoxide (CO) due to continuing violations recorded on monitors in Washington D.C. Fort Belvoir is considered to be a significant regional source of air pollution since emissions from the Post are greater than 100 tons per year.

The Post is also periodically inspected by the Commonwealth of Virginia Air Pollution Control Division. These inspections have revealed that the Post is in compliance with state and federal air pollution standards (USACE, 1991).

The primary contribution to local air quality conditions at Fort Belvoir is the emission of gaseous and particulate materials (USACE, 1991). In addition to emissions from vehicles, four incinerators, 105 boilers, and 12 generators operate on the installation (RPMP, 1993).

4.3 Water Quality

4.3.1 Surface Water

Fort Belvoir is situated adjacent to the Potomac River between Gunston Cove and Dogue Creek in the Potomac River watershed. The Potomac River is considered a significant aquatic resource in the Washington area for commerce and recreation and has shown an improvement in water quality over the last 10 years. Recent data indicates that ortho-phosphate and total phosphorus concentrations have decreased, effluent oxygen demands have decreased, submerged aquatic vegetation (SAV) has increased, and a general decrease in bacterial levels has occurred.

Accotink, Dogue and Pohick creeks make up the watersheds that encompass Fort Belvoir. Accotink is the largest of the three creeks and its headwaters are located near Vienna, Virginia (to the north) and Fairfax, Virginia (to the west). It flows in a south-southeasterly direction through Fort Belvoir, near Accotink Village, before reaching the Potomac River at Accotink Bay and Gunston Cove.

Free-flowing water within the Fort Belvoir area is classified as Class III trout waters by the Virginia Commission of Game and Inland Fisheries. However, water quality in all three watersheds is degraded and does not support trout (RPMP, 1993).

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4.3.1.1 American Heritage Rivers

On July 30, 1998, the Potomac River was designated an American Heritage River under the American Heritage Rivers Initiative. The initiative is designed to help communities restore and protect their river resources in a way that integrates natural resources, economic development, and the preservation of historic and cultural values. Designated rivers will receive special recognition and focused federal support.

4.3.1.2 Floodplains

The 1971 Federal Insurance Administration [now Federal Emergency Management Agency (FEMA)] Flood Insurance Study (FIS) for Fairfax County places the developed portions of Fort Belvoir outside the 100-year floodplain for Dogue Creek and Accotink Creek (Zone C, areas of minimal flooding).

4.3.2 Groundwater

Fort Belvoir is located in the central and eastern portions of the Virginia Coastal Plain and is underlain by sedimentary features known as the Potomac Formation. Groundwater supply in the southeastern portion of Fairfax County is typically provided by deep layers of coarse-grained strata located between thinner layers of fine-grained sand and gravel. Groundwater yields in the Coastal Plain can reach up to 100 gallons per minute (gpm) and they are vulnerable to contamination if classified as an aquifer recharge area.

Site specific groundwater data are not available and although the project area is not located in a principal aquifer recharge area the site remains vulnerable to groundwater contamination. Groundwater resources in the Coastal Plain can be used as a water supply source. Fort Belvoir withdraws groundwater primarily for irrigation purposes only. Potable water is supplied to Fort Belvoir by the Fairfax County Water Authority (US Army Garrison Fort Belvoir, June 1999).

4.4 Aquatic Resources and Wetlands

4.4.1 Chesapeake Bay Preservation Act

The Chesapeake Bay Preservation Act was passed in 1988 by the Virginia General Assembly to protect the water quality of the Chesapeake Bay. This legislation requires the 27 tidewater counties in Virginia to: (1) incorporate water quality protection measures into comprehensive plans, zoning ordinances, and subdivision ordinances; (2) establish programs that define and protect Chesapeake Bay preservation Area; and (3) otherwise include the new regulations incorporated into the Act.

4.4.2 Environmentally Protected Areas

Fort Belvoir is classified as a Resource Management Area (RMA) under the Chesapeake Bay Preservation Area Designation Criteria (Virginia Regulation 173-02-00, Part III). A RMA consists of land that protects the value of the Resource Protection Area (RPA), and is designated

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landward of and contiguous to all RPAs. If land types within an RMA are improperly used or developed, there is a potential for causing significant water quality degradation, or for diminishing the functional value of the RPA.

A majority of both the Accotink Bay Wildlife Refuge and the Jackson Miles Abbott Wetland Refuges are designated as environmentally protected areas. All of the land that margins the post's limitations adjacent to Dogue Creek, Pohick Bay, Gunston Cove and the Potomac River are designated as environmentally protected areas. Most of the tributaries that flow into these bodies of water are also included in the protected areas. Land designated as training areas T-4, T-6, T-7, T-8, T-8A, T-8C, T-9, T-15, T-16 and T-17 are either partially if not completely included in the environmentally protected areas.

4.4.3 Wetlands

Fort Belvoir completed baseline surveys of wetlands on the Main Post in 1997 (Paciulli-Simmons, 1997). The survey consisted of aerial photo interpretation combined with groundtruthing, following methods outlined in the *1987 Corps of Engineers Wetland Delineation Manual*. About 1,250 acres (506 hectares), or 11 percent, of the Main Post land area is wetland (Figure 3.8, Environmental Protection Areas). Wetland types found were:

- The predominant type of wetland is classified as palustrine forested (Cowardin, 1979), and occurs in association with riparian areas of Accotink, Dogue, and Pohick Creeks;
- Freshwater tidal marsh wetland occurs along Accotink and Pohick Bays;
- Ephemeral wetlands are scattered throughout the forested portions of the installation;
- There are seepage swamp wetlands associated with slope areas; and
- There are beaver swamp wetlands within installation riparian areas (DTRA, 2000).

The majority of wetlands on the Fort are located at the along the tributaries flowing into, as well as at, the Jackson Miles Abbott Wetland Refuge and along an unnamed stream flowing into Gunston Cove around the Accotink Bay Wildlife Refuge. Other wetlands are scattered throughout the tributaries of Dogue Creek, at both the southeastern and southwestern edges of the post's limits and various other areas adjacent to the post's designated limits.

Wetlands are protected from filling and dredging by Section 404 of the federal Clean Water Act. The regulatory programs of the USACE are presented in 33 Code of Federal Regulations (CFR) Parts 320 through 330. Section 404(b)(1) of the Act presents measures to determine the type and level of mitigation required in the event of unavoidable wetland impacts.

4.4.3.1 Forested Wetlands

Forested wetlands on Fort Belvoir occur as two forms, bottomland hardwoods and riparian-forested wetlands. Bottomland hardwoods are found the in the floodplains of Accotink and

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Dogue Creeks. These areas are typically dominated by red maple (*Acer rubrum*), white ash (*Fraxinus americana*), black tupelo (*Nyssa sylvatica*), and sweetgum (*Liquidambar styraciflua*). Activity by beavers (*Castor canadensis*) is prevalent on both Dogue and Accotink creeks and more recently on Pohick Creek. In these areas, beaver dams have impeded the flow of water leading to the creation of ponds and marsh.

Riparian forested wetlands are found along the upland drainage systems and are not structurally distinguishable from the more mesic upland hardwoods surrounding them (RPMP, 1993).

4.4.3.2 Emergent Wetlands

Fort Belvoir's emergent wetlands include both wet meadows and tidal-freshwater marshes. There are primarily distributed at the mouths of the three major creeks. The Dogue Creek marsh (28 acres) is dominated by pickerelweed (*Pontederia coredata*) and arrow-arum (*Peltandra virginica*). Yellow pond lily (*Nuphar* spp.) predominates in the more open waters. Swamp rose (*Rosa palustris*), silky dogwood (*Cornus amomum*), alder (*Alnus* spp.) and sedges (*Carex* spp.) are common in the wet meadows created by beaver flooding further up Dogue Creek.

The Accotink Creek marsh (158 acres) is dominated by yellow pond lily, in the intertidal area and pickerelweed, arrow-arum and cattails (*Typha* spp.) in the adjacent freshwater marsh.

The Pohick Creek marsh (89.5 acres) is also dominated by pickerelweed, arrow-anum, arrowhead (*Sagittaria* spp.), and sweetflag (*Acorus calamus*). Yellow pond lily is found in the opens (INRMP, 1992)(RPMP, 1993).

4.5 Vegetation

The terrestrial vegetation present on the installation consists almost entirely of landscaped trees and grasses. Common grasses present on the installation include Kentucky bluegrass, red fescue, perennial rye, zoysia and Bermuda maintained as turf. Some small, scattered wooded areas, which contain the natural vegetation of the region, are found on portions of the installation. Common invasive plants found at Fort Belvoir include wild garlic (*Allium vineale*), wild onion (*Allium canadense*), common chickweed (*Stellaria media*), crabgrass (*Digitaria* sp.), buttercups (*Ranunculus* sp.), and ground ivy (*Glechoma headeracea*). Vegetation management activities include mowing, planting, fertilizing, pruning, and chemical control.

The undisturbed portions of Fort Belvoir support a variety of upland and wetland forest types of varying ages. Some areas have not been disturbed since the mid-1940's. They contain all of the typical woodland species found in the Mid Atlantic Coastal Plain such as red oak (*Quercus falcata*), white oak (*Quercus alba*), red maple (*Acer rubrum*), black gum (*Nyssa Sylvatica*) (*Pinus taeda*) (*cornus florida*), serviceberry (*Amalanchier canadensis*), pepperbush (*Clethra alnifolia*), laurel (*Kalmia latifolia*) as well as a variety of ferns and other herbaceous plants.

An installation-wide vegetation study of Fort Belvoir (Paciulli-Simmons, 1998) identified 16 community types, included in the broader categories of mixed hardwood forests, pine forests, floodplain hardwood forests, wetlands, old field grasslands, and urban land. Table 4-2 below identifies the plant communities on Fort Belvoir..

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Table 4-2: Plant Communities on Fort Belvoir

Community Type	Acreage	Description	Dominant Species
Mixed Hardwood Forest			
Oak/Ericad (Heath Family) (OEF)	1,253	Upland forests on gravelly ridges and dry slopes, on tops of hills and bluffs and along steep well-drained slopes.	<u>Overstory:</u> Chestnut Oak (<i>Q. prinus</i>), Northern Red Oak (<i>Q. rubra</i>), White Oak (<i>Q. alba</i>) Scarlet Oak (<i>Q. coccinea</i>) <u>Understory:</u> Huckleberry (<i>Gaylussacia baccata</i>), Deerberry (<i>Vaccinium stamineum</i>), or Mountain Laurel (<i>Kalmia latifolia</i>)
Beech Mixed Oak (BMO)	1,146	Upland forest located on more gradual slopes, at lower elevations than Oak/Ericad type.	<u>Overstory:</u> White Oak and Northern Red Oak <u>Understory:</u> American Beech (<i>Fagus grandifolia</i>), Flowering Dogwood (<i>Cornus florida</i>), red maple (<i>Acer rubrum</i>) and Cherryleaf Viburnum (<i>Viburnum prunifolium</i>)
Tulip Poplar Mixed Hardwood (TMH)	987	Upland forests of moist fertile ravine slopes and ravine bottoms. Found in habitats similar to Beech Mixed Oak forest but on more gradual slopes and ravine bottoms.	<u>Overstory:</u> Tulip Poplar (<i>Liriodendron tulipifera</i>) with mixed American Beech, White Oak, and Northern Red Oak <u>Understory:</u> Flowering Dogwood, American Beech and Red Maple
Seep (SEP)	38.5	Open-canopy forests of groundwater-saturated flats and slopes generally surrounded by mixed hardwood forests.	Red Maple, Black Gum (<i>Nyssa sylvatica</i>), sweetbay magnolia (<i>Magnolia virginiana</i>), Skunk Cabbage (<i>Symplocarpus foetidus</i>), Sensitive Fern (<i>Onoclea sensibilis</i>) and Royal Fern (<i>Osmunda regalis</i>)
Pine Forests			
Mixed Pine Hardwood (MPH)	196	Transitional forests between early successional pine and climax hardwood types. Hardwoods and pines evenly distributed or neither type more than 70 percent dominant. Dominant hardwoods in these stands are variable, but are based on topography and the species composition of adjacent hardwoods.	Virginia Pine (<i>Pinus virginiana</i>) is generally the dominant pine in these stands, but Loblolly Pine (<i>Pinus taeda</i>) is also present.

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Community Type	Acreage	Description	Dominant Species
Pine Forests (cont)			
Virginia Pine (VPF)	425	Early successional forests of old fields or other land clearings dominated by greater than 70 percent Virginia Pine.	Virginia Pine is most abundant and occurs naturally. White and Loblolly pine have most likely been introduced through plantings.
Loblolly Pine (VPF)	245	Small areas of Fort Belvoir have been planted in Loblolly Pine. Native stands are not prevalent.	
White Pine (WPF)	6.3	One stand of White Pine occurs at the Elhers Road entrance to the Davison Army Airfield. White Pine has also been used throughout Fort Belvoir for landscaping.	
Floodplain Hardwood Forests			
Poorly-Drained Floodplain Hardwood (PFH)	2,587	Palustrine forests occurring on somewhat-poorly to very poorly-drained soils in floodplain bottomlands and sloughs. These areas are inundated and saturated for long enough to be considered wetlands, and are dominated by hydrophytic vegetation. They are most extensive along the floodplains of Pohick and Accotink creeks	<u>Overstory:</u> Pin Oak (<i>Quercus palustris</i>), Willow Oak (<i>Q. phellos</i>), Green Ash (<i>Fraxinus pennsylvanica</i>), Sycamore (<i>Platanus occidentalis</i>), Red Maple, River Birch (<i>Betula nigra</i>), and Sweetgum. <u>Understory:</u> Highbush Blueberry (<i>Vaccinium corymbosum</i>).
Moderately Well-Drained Floodplain Hardwood (MFH)	173	These communities characterize most of the major floodplains. They occur on moderately to somewhat poorly drained floodplain bottomland soils, and are transitional between upland and wetland forest in species composition. However, the well-drained soils do not remain inundated or saturated for long enough to be considered wetland.	<u>Overstory:</u> Tulip Poplar, Red Maple, Sweetgum (<i>Liquidambar styraciflua</i>) <u>Understory:</u> Ironwood (<i>Carpinus caroliniana</i>), Red Maple, and Spicebush (<i>Lindera benzoin</i>).

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Community Type	Acreage	Description	Dominant Species
Other Wetlands			
Non-Tidal Marsh/Beaver Pond (NTM)	131	These communities are successional herbaceous to scrubby wetlands, found above the tidal limits along Accotink and Pohick creeks, and along Dogue Creek within the Jackson Miles Abbott Wildlife Refuge. Many of these habitats have been created or influenced by Beaver (<i>Castor canadensis</i>) activity.	Emergent species include Arrow Arum (<i>Peltandra virginica</i>), Rice Cutgrass (<i>Leersia oryzoides</i>), sedges (<i>Carex spp.</i>), rushes (<i>Juncus spp.</i>), smartweeds (<i>Polygonum spp.</i>), and Swamp Rose Mallow (<i>Hibiscus moscheutos</i>). Shrubs include Buttonbush (<i>Cephalanthus occidentalis</i>), Swamp Rose (<i>Rosa palustris</i>), Swamp Dogwood (<i>Cornus amomum</i>).
Tidal Marsh (TMA)	96	These communities dominate the shallow tidal areas of Accotink and Dogue creeks, and also the mouths of smaller streams.	Arrow Arum, Yellow Pond Lily (<i>Nuphar luteum</i>), Pickerelweed (<i>Pontedaria cordata</i>), Wild Rice (<i>Zizania aquatica</i>), Cattail (<i>Typha latifolia</i>), and River Bulrush (<i>Scirpus fluviatilis</i>).
Freshwater Tidal Swamp Forest (TSF)	45	These communities are tidally influenced palustrine forests.	<u>Overstory:</u> Green Ash and Red Maple <u>Understory:</u> Variable, and influenced by the extent of tidal flooding and openness of the canopy. Highbush Blueberry, Arrowwood (<i>Viburnum dentatum</i>), and Swamp Dogwood characterize the less frequently inundated areas. Semi-permanently and permanently flooded areas are characterized by broadleaf emergents such as Arrow Arum, Yellow Pond Lily, and Pickerelweed.
Tidal Scrub/Shrub Wetlands (TSS)	15.5	This community is generally limited to the margins of Tidal Swamp Forests, at the transition to Tidal Marsh.	Black Willow (<i>Salix nigra</i>), Red Maple, Common Alder (<i>Alnus serrulata</i>), and Green Ash
Other			
Urban Land (URB)	2,809	This category includes all developed areas on Fort Belvoir. This category includes all improved and semi-improved grounds including buildings, landscaped areas, the airfield, and golf courses.	Plant species include a wide variety of landscaped trees and shrubs, Tall Fescue grass, and Kentucky Bluegrass (<i>Festuca arundinacea</i>).
Old Field Grasslands	233	These communities are unimproved open fields or areas that are infrequently mowed. Old Fields at Fort Belvoir occur in areas cleared for landfills, training, and farming.	Dominant species include a variable mix of grasses and wildflowers, such as Broomsedge (<i>Andropogon virginicus</i>), Tall Fescue (<i>Festuca elatior</i>), and Bushclover (<i>Lespedeza cuneata</i>).

Source: Paciulli-Simmons, 1998 in Home Engineering, INRMP (work in progress, 2000), DTRA, 2000

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4.6 Wildlife Resources

Fort Belvoir has set aside 2,524 acres (1,021 hectares) of land for wildlife, including the Accotink Bay Wildlife Refuge, the Jackson Miles Abbott Wetland Refuge, and a Forest and Wildlife Corridor. These and other undeveloped areas of Fort Belvoir, such as stream valleys and slopes, are home to numerous wildlife species. Based on information from installation-wide surveys that were conducted for the preparation of the Fort Belvoir *Integrated Natural Resources Management Plan* (INRMP) (Ernst and Miller, 1997; Ernst and Belfit, 1997 in Horne Engineering, 2000), the installation contains potential habitat for any one of 42 species of mammals, 260 species of birds, 32 species of reptiles, and 27 species of amphibians. Some common species found at Fort Belvoir are:

- Northern short-tailed shrew (*Blarina brevicauda*);
- Chipmunk (*Tamias striatus*);
- Eastern grey squirrel (*Sciurus carolinensis*);
- Eastern cottontail rabbit (*Sylvilagus floridana*);
- Woodchuck (*Marmota momax*);
- A variety of common reptiles;
- American crow (*Corvus brachyrhynchos*);
- American robin (*Turdus migratorius*);
- European starling (*Sturnus vulgaris*);
- House sparrow (*Passer domesticus*);
- Blue jay (*Cyanocitta cristata*); and
- Whitetail deer (*Odocoileus virginianus*)
- Raccoon (*Procyon lotor*);
- Striped skunk (*Mephitis mephitis*);
- Opossum (*Didelphis virginiana*);
- Red fox (*Vulpes vulpes*);
- Gray fox (*Urocyon cinereoargenteus*),
- Whitetail deer;
- A wider variety of reptile species, including turtles and amphibians;
- A wide variety of common woodland passerine birds; and
- Raptors.

Other potential species found at Fort Belvoir include the Bobcat (*Lynx rufus*) which is reported on the Mason Neck peninsula and the Coyote (*Canis latrans*) an inhabitant of western Fairfax County. Three bat species have been identified as residing on Fort Belvoir, Big Brown Bat (*Eptesicus fuscus*), Red Bat (*Lasiurus borealis*) and Eastern Pipistrelle (*Pipistrellus subfervus*). The migrant Silver-Haired Bat (*Lasionycteris noctivagans*) has also been found (ORVP, 2000).

4.6.1 Wildlife Refuges

The most significant effort to preserve the terrestrial wildlife habitat of the Post and the region has been the establishment of two wildlife refuges comprising a combined area of 1,461 acres. The Jackson Miles Abbott Wetland Refuge is 146 acres in the northeastern corner of the Post. The Accotink Bay Wildlife Refuge covers approximately 1,315 acres centered about Accotink

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Bay and Accotink Creek in the south-central portion of the Post. These refuges incorporate much of the wetland habitat on the Post and a significant portion of the wetlands in Fairfax County, as well as some older growth pine stands and bottomland hardwood forests. The Accotink Bay Wildlife Refuge harbors approximately two-thirds of the bird fauna that at least occasionally occur at Fort Belvoir.

Due to its location adjacent the Potomac River, Fort Belvoir is on a major migratory route for waterfowl and other avian species. Both the Abbott and Accotink refuges are considered permanently preserved and therefore will not be available for development. In addition, the forest stands in these areas, except for some of the pine stands that could benefit from thinning, are not included in any type of forest management for merchantable lumber. Each of these areas provides significant outdoor recreation opportunities-several miles of hiking trails, boardwalks in marshes, and observation points. They are frequently used by off-Post civilians including school groups (RPMP, 1993)

4.6.2 Forest and Wildlife Corridor

As another significant effort to preserve the integrity of the terrestrial wildlife habitat of the Post and the region, the Fort Belvoir natural resources managers are attempting to develop and maintain, to the extent possible, a continuous forested corridor through the Post. The purpose of this Forest and Wildlife Corridor is to prevent genetic isolation of animal populations by allowing the natural movement of wildlife and plant life between the more extensive forest habitats of the Abbott Refuge and the Huntley Meadows Park north of the Post, and the Accotink Refuge and Mason Neck National Wildlife Refuge south of the Post. The spatial limits of the corridor have been determined to be a minimum of 250 meters wide and contiguous from Huntley Meadows to Mason Neck.

Forested areas in the northern, western, and southern portions of the Post would comprise the majority of this corridor. However, the more expansive forest stands are already fragmented by roadways or other small-deforested areas. At several locations the Forest and Wildlife Corridor is discontinuous, and a long-range commitment to restoration and preservation of the forest is required for this corridor concept to become fully biologically viable (RPMP, 1993)

4.7 Threatened and Endangered Species

The Endangered Species Act (ESA) of 1973 and subsequent amendments provide for the conservation of threatened and endangered species of animals and plants and the habitats in which they are found. The Department of the Army ensures that consultations are conducted as required under Section 7 of the ESA for any action that “may affect” a federally listed threatened or endangered species according to guidance in Army Regulation (AR) 200-3. The Army also complies to the extent practicable with state threatened and endangered species lists.

The U.S. Fish and Wildlife Service, the Virginia Department of Agriculture and Consumer Services, and the Virginia Department of Game and Inland Fisheries were contacted regarding the presence of rare, threatened, and endangered species in the vicinity. In 1994 and 1995, the

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Virginia Department of Conservation and Recreation, Division of Natural Heritage (VDCR/DNH) (Hobson, 1996 in Horne Engineering, work in progress, 2000) conducted a field survey for endangered, threatened, and state rare species at Fort Belvoir. One species listed as both federally and state-threatened and one state-listed threatened species were identified. The first of these, the bald eagle (*Haliaeetus leucocephalus*), has since been proposed for de-listing by the federal government, but is still considered threatened within the Commonwealth of Virginia. The shorelines of major creeks, rivers, and lacustrine areas on Fort Belvoir provide valuable nesting, foraging, and loafing habitat for resident and migratory bald eagles.

The other state-listed threatened species found at Fort Belvoir is the wood turtle (*Clemmys insculpta*). The wood turtle inhabits forested floodplains and nearby fields, wet meadows, and farmlands. There is an established population of these turtles at Huntley Meadows Park, northeast of the Jackson Miles Abbott Wildlife Refuge. There have been three wood-turtle sightings within Fort Belvoir in the last two years, indicating that this species has likely become established on the installation

4.8 Prime and Unique Farmlands

Approximately 1,600 acres (19 percent) of Fort Belvoir's soils have been identified as "prime" farmlands (RPMP, 1993)

4.9 Wild and Scenic Rivers

The National Park Service has verified that no waterways in the vicinity of Fort Belvoir are protected under the Wild and Scenic Rivers program.

4.10 Cultural Resources

Federal agency actions must comply with the National Historic Preservation Act (NHPA) of 1966, as amended. The intent of the NHPA is to integrate consideration of historic preservation issues into the early stages of project planning by a federal agency. Under Section 106 of the NHPA, the head of any federal agency having direct or indirect jurisdiction over a proposed federal or federally financed undertaking is required – before the expenditure of any federal funds on that undertaking – to account for its effects on any district, site, building, structure or object that is included or eligible for inclusion in the National Register of Historic Places.

Section 110, as amended, of the NHPA directs federal agencies to establish a program to locate, inventory, and nominate to the Secretary of the Interior all properties under their ownership or control that appear to qualify for inclusion in the National Register of Historic Places. To this end, the cultural resources of Fort Belvoir have been surveyed utilizing the National Register Criteria for Evaluation (36 CFR 60.4).

4.10.1 Historic Districts

All of the designated historical areas on Fort Belvoir are located in the southeastern portion of the post. A majority of the historic district is located in Gerber Village, with other large portions

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in both Belvoir and Fairfax villages. A separated section of the district is located at the south end of post less than 300 feet from training area T-17.

Historic properties that are adjacent to Fort Belvoir consist of the following: Pohick Church, Mount Air and Woodlawn Plantation; these are separate historic districts. Pohick Church is listed on the National Register of Historic Places and the Virginia Landmarks Register. The boundary of the Pohick Church Historic District affects the western portion of Fort Belvoir, south of U.S. Route 1 with the Benham Woods section of the Southwest Area. The Woodlawn Plantation Historic District affects Fort Belvoir north and south of U.S. Route 1, from Belvoir Road east to the Mount Vernon Memorial Highway (Route 235).

No exterior changes may be made to these historic structure that lie within the historic districts (nor may they be demolished) without prior approval from the Fairfax County Architectural Review Board. The building and land designs for other properties within the historic district are strictly regulated (RPMP, 1993).

4.10.2 Previous Investigations

Numerous architectural and archeological investigations have been conducted at Fort Belvoir. These investigations have identified numerous architectural and archeological resources that are listed in, or eligible for listing in the National Register of Historic Places (NRHP). The first cultural resource investigations were archeological surveys conducted in the 1960's, more comprehensive archeological surveys were conducted in the 1980's. In 1992, there was a completed phase 1 archeological survey of Fort Belvoir.

The first architectural surveys were conducted at Fort Belvoir in the mid-1980's and survey work continued into the 1990's with the identification of several architectural resources that are eligible for listing in the NRHP. As a result of the 1984 architectural surveys, Historic American Building Survey (HABS) documentation was developed on several buildings on the installation. Subsequent surveys identified a historic district. An Integrated Cultural Resource Management Plan is currently under development for Fort Belvoir.

4.10.3 Archeological Resources

There are more than 250 known archeological sites present on Fort Belvoir. The sites consist of a mix of prehistoric, historic, and mixed prehistoric/historic components. The Belvoir Mansion Ruins and Fairfax Grave Site are listed in the NRHP. Eleven other archeological sites have been formally determined eligible for listing in the NRHP. An additional 92 sites have been recommended as being eligible for listing in the NRHP and 84 other sites contain the potential for being eligible.

Due to the sensitive nature of the site location information, no specific information about the location of the sites is provided in this document. Site information will be provided to appropriate individuals or agencies on a need-to-know basis.

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4.10.4 Architectural Resources

Although, no architectural resources at Fort Belvoir are formally listed in the NRHP, several historic properties have been formally determined eligible for listing in the NRHP. The Thermo-Con House, Camp A.A. Humphreys Pump Station and Filter Building, and the U.S. Army Package Power Nuclear Reactor have been found to be individually eligible for listing in the NRHP.

The Fort Belvoir Historic District is also eligible for listing in the NRHP. There are 195 contributing buildings, and one (1) contributing structure, in the historic district. Buildings in the district are primarily family housing units, but there is also a mix of administrative buildings, a firehouse, a theater, and a chapel. The parade ground is a central feature in the district. The district is centrally located south of U.S. Route 1 in the middle of the peninsula located between Dogue Creek and Accotink Bay.

There are no buildings that predate the establishment of Fort Belvoir remaining on the installation. The majority of the World War II buildings that were constructed at Fort Belvoir were temporary mobilization buildings. Historic American Building Survey documentation has been completed on 700 and 800 series World War II temporary buildings as part of a 1986 Programmatic Agreement on World War II temporary construction. The majority of the temporary mobilization buildings have been demolished.

An architectural survey of all buildings 45 years or older on Fort Belvoir is now underway (DTRA, 2000).

4.11 Hazardous, Toxic, and Radioactive Substances (HTRS)

Hazardous and toxic wastes are generated and managed on Fort Belvoir, especially in the many research and development areas. Most of these areas produce a wide variety of chemicals. Additional areas of hazardous waste generation include the DeWitt Hospital, motor repair shops, and building maintenance shops.

The installation has operated under a Resource Conservation and Recovery Act (RCRA) part A Interim Status permit since November 1980.

4.11.1 Underground Storage Tanks (USTs) and Above-Ground Storage Tanks (ASTs)

Approximately 600 USTs, of which 200 are regulated, are located on Fort Belvoir and contain substances such as heating oil, diesel fuel, motor gasoline (MOGAS), jet propulsion fuel (JP-4), aviation gasoline (AVGAS), lube oil, kerosene, hydraulic fluids, solvents, waste oils, or hazardous waste. These tanks range in size from 110 to 33,000 gallons. A UST inventory completed in 1991 indicates that a number of tanks were installed during or prior to World War II, and some were installed before 1920. A Post-wide tank-testing program was completed in 1991 which consisted of tightness testing, removal, replacement, and upgrading for these tanks. All replacements are with double-walled, state-of-the-art USTs.

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Although metal USTs of any size that are not protected from corrosion present some degree of pollution potential, the primary concern from an environmental planning standpoint is the presence of large tanks, particularly where they occur in clusters. A total of 83 USTs at Fort Belvoir have capacities of 10,000 to 33,000 gallons.

Although the large tank clusters constitute the primary environmental concern relative to USTs because of their capacity to release large volumes of pollutants, other UST areas at Fort Belvoir could also be considered for their pollution potential. Forty-six USTs in excess of 10,000 gallons are sited individually or in pairs, and numerous smaller tanks are sited individually or in clusters throughout the Post.

The motor repair shop area includes more than 70 USTs containing up to 1,000 gallons of fuel oil, with installation dates ranging from 1940 to 1945. The UST inventory reports five USTs at Building 5034 to be of unknown size and contents.

A budget of \$3 million per year is programmed for the removal, replacement, and upgrade of USTs. USTs containing hazardous wastes and waste oil are prioritized for removal. Tanks will be removed and not replaced where they are no longer needed. All tank replacements will use double-walled, state-of-the-art USTs. Where appropriate, storage capacities will be reduced (for example, where two 20,000-gallon tanks are currently in the ground but only 10,000 gallons of capacity is required, these tanks will be replaced with one 10,000-gallon tank) (RPMP, 1993).

4.11.2 Polychlorinated Biphenyls

Fort Belvoir has two areas of polychlorinated biphenyl (PCB) contamination. The site of the old DRMO west of King Street and south of 12th Street had 1,700,000 pounds of contaminated soil removed. The area was capped with clean soil, and trees have been planted. Regulators have been told that this area will not be developed. The second contaminated area is the old coal yard located south of Warren Avenue. This area has been cleaned up and is available for future development.

All current and former hazardous waste storage sites present some potential constraints to future development since closure of these sites, which is necessary prior to reuse, is subject to regulatory approval. Such approval is often difficult to obtain in a timely manner (RPMP, 1993)

4.11.3 Radon

A decommissioned nuclear generator plant (SM-1) is located in the BRDEC area. The radioactive fuel was removed and shipped from the site for reprocessing; however, the remaining core material has been shielded and encased in concrete to make it radiologically safe. The plant is monitored by an independent contractor, and a status report is filed quarterly. The facility continues to meet all regulations. Some parts of the old plant are used for offices.

Other sources of radiation are associated with luminous dials off equipment and vehicles. DRMO assists in the management of these wastes, but the wastes remain at the generation site until off-site transport can be arranged.

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Various antenna arrays and other equipment possibly emitting radio, laser, microwave, and other forms of electromagnetic radiation exist within the D/CEETA compound. There is no electromagnetic radiation problem at ground level around D/CEETA.

Naturally occurring radon is apparently not a concern at Fort Belvoir (Multimedia Compliance Audit, Fort Belvoir, Virginia, November 1991).

A safety radiation protection program is in place at Fort Belvoir and is governed by the Radiation Control Committee (RPMP, 1993)

4.11.4 Asbestos Containing Materials (ACM)

No Post-wide survey has been conducted at Fort Belvoir to determine the presence and distribution of asbestos. Fort Belvoir complies with all Federal and Army asbestos standards. If human exposure to asbestos-containing material (ACM) is discovered or is determined to be likely, the ACM is properly managed pursuant to the National Emissions Standards for Hazardous Air Pollutants (40 CFR 61, subpart M).

4.11.5 Lead-Based Paint (LBP)

No Post-wide survey has been conducted at Fort Belvoir to determine the presence of lead-based paint (LBP). Lead abatement is carried out by Directorate of Installation Support (DIS) on a case-by-case basis in accordance with the guidelines set forth by OSHA and DPW.

4.11.6 Pesticides, Herbicides, and Fertilizers

The weed and pest control program for Fort Belvoir is currently administered by the Quality Assurance Branch of DIS. Application of herbicides is contracted to a private firm that also fertilizes the grounds. No bulk storage of pesticides or herbicides occurs on installation property. A listing of the pesticides and herbicides likely used on the Post is provided in Table 4-3 below.

Table 4-3: Pesticide and Herbicide Use at Fort Belvoir

Product Description	Pesticide/Herbicide	Manufacturer Name	National Stock Number	Annual Usage (lb/yr)
Vengeance	Pesticide	Velsicol Chemical Corporation	6840-00-F00-8482	53
Acephate	Pesticide	Valent	-	3,175.30
I Growth Reg	Pesticide	Zoecon Corporation	6840-01-318-7416	239
Boric Acid	Pesticide	Chemplex	-	1
Aygon	Pesticide	Mobay Corporation	6840-00-180-6069	5
Maxforce	Pesticide	American Cyanimid Company	6840-00-N01-4804	0.9
Talon	Pesticide	ICI Americas, Inc.	-	1
Safrothin	Pesticide	Zoecon Industries, Inc.	6840-01-318-7415	1744.7
Drione	Pesticide	Fairfield American Corporation	6810-00-N01-7669	15
Tempo	Pesticide	Mobay Corporation	6840-00-F02-3505	421.3
Pyrethrum	Pesticide	Whitmire Research Laboratories, Inc.	6840-00-N00-3765	30.9
Bio-Path	Pesticide	Johnson Wax	6840-01-088-9075	-
Diazinon	Pesticide	Prentiss Drug & Chemical Company, Inc.	-	556.4

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Dursban	Pesticide	Van Waters & Rogers	6840-01-270-9766	39.5
Daconil 2787	Herbicide	SDS Biotech Corporation	6840-00-F00-6272	15.9
Allethrin	Pesticide	Bulk Chemicals Distributors, Inc.	6840-00-823-7851	2
Commodore	Pesticide	ICI Americas, Inc.	-	192.1

SOURCE:

4.11.7 Storage of Hazardous Materials

Fort Belvoir submitted a Notification of Hazardous Waste Activity to the U.S. EPA on 18 August 1980. In the notification, Fort Belvoir identified itself as a generator, transporter, and storer of the following waste categories: waste diesel fuel and jet propulsion fuel (JP-4), solvents, antifreeze, paints and strippers, small quantities of organic chemicals, mercury, photographic wastes, printing inks, batteries, rust inhibitors, adhesives, oil -contaminated floor sweepings, and Defense Reutilization and Marketing Office (DRMO) general wastes.

Fort Belvoir filed its original RCRA Part A Permit application for the treatment and storage of hazardous wastes in November 1980. Interim status was granted by the EPA in October 1981. The units covered by this application were Buildings 2517, 1490, 707, 190, 1124, 362, 317, 305, and 5095. A revised Part A was submitted in March 1988 to reflect changes in the management of the wastes. These changes included adding Buildings 625, 627, 632, 633, 634, and 363 and deleting Buildings 190, 317, 362, and 305. The Post submitted an interim Part B permit application to the EPA on 4 November 1988 for storage and treatment of hazardous waste. Additional portions of Part B were sent to the EPA on 1 February 1990 and on 30 April 1990. The Virginia Department of Waste Management issued a Part B Permit for treatment and storage of hazardous wastes to Fort Belvoir on March 17, 1993. A Part B Permit for Buildings 1490 and 2991 and the underground storage tank (UST) at Building 1124 was also issued on March 17, 1993.

Unusable or excess hazardous materials remaining in original, intact, and unopened containers are received and stored prior to resale or disposal at the DRMO facility. DRMO does not accept physical custody of hazardous wastes. The waste generator stores the waste for no longer than 90 days at various satellite accumulation points prior to transport to Building 1490 (the primary accumulation point for the Post), where arrangements for off-site transport are made through DRMO. DRMO also contracts disposal of medically regulated wastes generated by the hospital.

APTUS is the current hazardous waste contractor.

A new DRMO conforming storage facility has been proposed. However, because Fort Belvoir currently is permitted for 10 years and downsizing will continue to reduce the amounts of materials for disposal, there are no plans at this time to construct a new facility or obtain a Part B permit including a new DRMO site.

Fort Belvoir has developed and submitted to the regulators hazardous waste storage site closure plans as part of the Federal Facility Compliance Agreement (FFCA). The closure plans include part of Building 1124, the fire training pit at Davison Army Airfield, Building 1957, the old magazine area (600 area), Building 707, Building 363, and 15 aboveground and USTs used for waste oils (see Land-based Constraints Map for sites other than USTs).

4.11.8 Contaminated Areas

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(Information to be provided).

4.12 Infrastructure

4.12.1 Electrical Distribution System Description and Requirements

4.12.1.1 Current Service Arrangements.

Fort Belvoir, VA currently purchases electricity from Virginia Power (VP) for the main post under the Rate Schedule MS – Federal Government Installations, through a single main substation at 34.5 kV. The Engineering Proving Grounds (EPG) and Humphrey's Engineering Center Support Activity (HECSA) are not included as part of the Fort Belvoir Installation as defined for this proposed action. A portion of Fort Belvoir's electrical distribution system is connected to the VP's grid at the Humphrey's Substation located in the northeast corner of the Installation. The Contractor will be granted an easement for the portion of the Fort Belvoir electrical distribution system that crosses the HECSA boundary. The Fort Belvoir electric distribution system consists of approximately 433,600 linear feet of overhead and underground lines and fourteen (14) substation/switching stations. The distribution system is composed primarily of overhead, pole-type (conventional open wire) construction with pole-mounted transformer banks. There is also some underground primary construction, utilizing both direct burial and duct-type construction methods. Most of the commercial area is served from the overhead system; a portion of the residential use area is served from the underground system.

The average electrical energy requirement for Fort Belvoir during FY 97 and FY 98 was 153,275 MWh. The proposed action would not include the procurement of electricity and would not, therefore, affect the current electricity contract with Virginia Power.

4.12.1.2 Electrical Distribution System.

A single VP-owned 34.5 kV feeder supplies four (4) Government-owned 34.5 kV feeders for service on the main post. These feeders serve as both distribution supply circuits and as subtransmission circuits that supply four (4) 34.5 kV switching stations, one (1) 34.5 kV/22.9 kV substation, four (4) 34.5 kV/4.16 kV substations, four (4) 22.9 kV/4.16 kV substations, and one (1) 34.5 kV/12.5 kV substation. The primary distribution system contains seventy-five (75) 4.16 kV, 12.5 kV, 22.9 kV and 34.5 kV circuits, most of which are configured with loop tie switches to neighboring circuits. The distribution system is also estimated to contain three (3) 34.5 kV subtransmission substations, ten (10) 4.16 kV distribution substations, approximately 388,000 linear feet (73.5 miles) of overhead primary and secondary distribution line, and approximately 45,400 linear feet (8.6 miles) of underground distribution line.

4.12.1.3 Electrical System Requirements.

Implementation of the proposed action would make the non-Federal entity responsible to manage the operation, maintenance, repairs, replacement, extension and/or removal of all or portions of the electrical distribution system to ensure adequate and dependable electric service is distributed to each Government or tenant connection within the installation premises. The non-Federal entity would assume ownership at the point of the VP 34.5 kV feeder attachment in the Humphrey's substation.

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4.12.1.4 Transmission Voltage / Demarcation Requirements.

Transmission voltage shall be distributed throughout the installation for transformation to a primary voltage of 34.5 kV, 22.9 kV, 12.5 kV and 4.16 kV. The non-Federal entity would be responsible for ensuring proper distribution of primary voltage for final transformation to typical operating voltages of 120, 208, 240, 277 and 480 V single- and three-phase at 60 Hz for each building or facility served. The Government would retain the responsibility at the service entrance (weatherhead, typically) for all aerial services up to and including the main breaker (disconnect or panel), within a building on the secondary side.

4.12.1.5 Substations

There are approximately eighteen (18) electrical substations and one large VEPCO owned station located on the Fort Belvoir premises.

4.12.1.6 Overhead Electric Lines

A large amount of the overhead lines run through the southeastern portion of the post to supply Lewis Heights, River, Dogue Creek, George Washington, Colyer, Belvoir, Fairfax and Gerber Villages. A majority of the overhead lines are located in environmental protected areas, including a major line extending parallel to John J. Kingman Road and through the forest and wildlife corridor. The overhead lines parallel to Poe Road are located inside the wildlife refuge boundaries.

4.12.1.7 Underground Electric Lines.

A large amount of the underground lines are distributed throughout sections of the post. A large section of underground lines are present in a building area adjacent to the Jackson Miles Abbott Wetland Refuge enclosed by Plantation Drive and Pole Road at the northwestern portion of the post. Different portions of lines are located in Gerber Village enclosed by Gunston and Belvoir Roads and in the neighboring areas.

Additional sections are also located in the northeastern portion of the post bordered by Sanjter and Britten Roads. Portions of these lines are located in the environmentally protected areas and in the Airfield Glide Path. Although a majority of the underground lines are not in environmental protected areas, there are a few scattered in areas, such as the lines parallel to Beulah Street, which extend through the forest and wildlife corridor.

Given that the underground lines are aged and portions may be in need of upgrade, the areas surrounding the lines are possibly corroded and the lines may be exposed.

4.12.2 Potable Water Utility Distribution System Description and Requirements

4.12.2.1 Current Service Arrangements.

The Fort Belvoir potable water distribution system consists exclusively of a water line distribution system and a chlorination booster station. No on-site water treatment facilities exist. Fort Belvoir is supplied with potable water by the Fairfax County Water Authority. The potable water distribution system is owned and maintained by Fort Belvoir. The EPG and HECSA are not included as part of the Fort Belvoir Installation as defined for this Contract.

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Water is supplied to Fort Belvoir by the Fairfax County Water Authority through a 30-in (76-cm) main on Telegraph Road that services a 24-in (61-cm) main utility corridor line within the post. The total average potable water usage for the post is 1.8 million gallons per day (mgd) (6.8 million liters per day [mld]); about 1.0 million gallons (3.8 million liters) are held in emergency storage. The water pressure and water service volume are aided by a pump station located near the Telegraph Road connection and five elevated water storage tanks (Woolpert, 1993).

4.12.2.2 Potable Water Distribution System.

The potable water distribution systems consists of approximately 523,800 linear feet of pipes, which include 80,300 linear feet of service laterals, approximately 1,100 main valves, two (2) main meters, sixty-eight (68) sample stations and approximately 641 hydrants. There are four (4) elevated water storage tanks and one (1) ground storage tank providing a combined capacity of almost 2.5 MGD. The majority of the distribution system was installed in 1940 and the estimated average age of the system is 49.4 years.

4.12.2.3 Potable Water System Requirements.

The Fort Belvoir potable water distribution system shall be operated and maintained in accordance with the Commonwealth of Virginia and other applicable health, safety, environmental and operational laws, regulations or standards. The non-Federal entity would be responsible to modify its service practices as required when applicable Federal, state or local laws, regulations or standards are changed or new ones are placed into effect. The non-Federal entity would assume all responsibility for the Virginia Department of Health Waterworks Permit as the purveyor of the water distribution system. The total potable water demand will also include fire protection.

4.12.2.4 Service Laterals.

The privatized potable water distribution system shall include service laterals. A service lateral is defined as the smaller-diameter (normally 2-inch or less) lines that connect each building to the upstream distribution mains. The distribution mains are the larger-diameter (normally greater than 2-inch) lines. Service laterals extend to the building's main shut-off valve .

4.12.2.5 Water Towers.

There are approximately (7) water towers located on the Fort Belvoir premises. One tower is located in the historic district in Gerber Village and another is located in an environmentally protected portion of Fairfax Village near the southern limits of the post. The other towers are randomly located throughout base.

4.12.2.6 Water Lines. A majority of the water lines on Fort Belvoir extend through environmentally protected areas.

Given that the underground lines are aged and portions may be in need of upgrade, the areas surrounding the lines are possibly corroded and the lines may be exposed.

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4.12.3 Wastewater Utility Collection System Description and Requirements

4.12.3.1 Current Service Arrangements.

The Fort Belvoir wastewater utility system consists of approximately 382,100 linear feet of service laterals, collection pipes and mains, 1,231 manholes and thirty-six (36) lift stations. The EPG and HECSA are not included as part of the Fort Belvoir Installation as defined for this Contract. Fort Belvoir does own and operate two ferrous sulfate sewage treatment facilities. All sewage generated at Fort Belvoir is delivered to a 42 inch transmission main and then transported to a Fairfax County, Virginia wastewater treatment plant that is governed by the Fairfax County Board of Supervisors and managed by the Fairfax County Office of Waste Management. Fort Belvoir's average total wastewater collection from FY 1996 to FY 1998 was 1.45 MGD. The proposed action would not include the procurement of wastewater treatment and would not, therefore, affect the current wastewater treatment contract with Fairfax County, Virginia.

4.12.3.2 Wastewater Collection System.

The Fort Belvoir wastewater collection system is composed primarily of clay pipe with the remainder comprised of mixed concrete, cast iron, and asbestos pipes. The pipe range in size from 24 inches to less than 4 inches with the most common size of 8 inches. An order-of-magnitude inventory report (Inventory Report), containing estimated linear feet, estimated installation dates, and other information for the wastewater collection system is attached in Section J, List of Attachments. This Inventory Report is provided to assist the non Federal entity, however the Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government.

4.12.3.3 Wastewater Collection System Requirements.

Implementation of the proposed action would require that the non-Federal entity operate, maintain, and expand, if necessary, the Fort Belvoir wastewater collection system in accordance with Commonwealth of Virginia and other applicable health, safety, environmental, and operational laws, regulations, or standards. The non-Federal entity would be responsible to modify its service practices as required when applicable Federal, state or local laws, regulations, or standards would be changed or new ones to be placed into effect.

4.12.3.4 Service Laterals.

Implementation of the proposed action would include service laterals as part of the wastewater collection system to be transferred. Service laterals are defined as the smaller-diameter (normally 6-inch or less) lines that connect each service building to the wastewater force mains. The collection mains are larger-diameter (normally greater than 12-inch) lines. Service laterals extend to the exterior walls of the building served by the lateral.

4.12.3.5 Sewer Lift Stations

Fort Belvoir has 38 sewage pumping stations connected to a system that discharges into a Fairfax County 42-in (107-cm) force main. The post is authorized to discharge 3.0 mgd (11.4 mld) of sewage, and currently discharges only 1.4 mgd (5.3 mld). The post also makes use of a 6,300-g

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(22,846-1) septic tank at the Defense Reutilization and Marketing Office (DRMO) facility. This tank is pumped out at least weekly. In 1984, a sewer rehabilitation program was initiated, much of which has been completed (Woolpert, 1993).

Three lift stations are located in the forest and wildlife corridor parallel to John J. Kingman Road, which happens to be an environmentally protected area. Three stations are located in protected areas, adjacent to Building 1832 near Franklin Road; adjacent to Building 1575 and Mount Vernon Road; next to Building 1696 parallel to Hudson Road; and fifteen others which scatter along the southeastern limits of the post, throughout Belvoir, Fairfax, Dogue Creek and Gerber Villages.

4.12.3.6 Sewer Lines

Many of the sewer lines are in environmentally protected areas. Main lines cross Pole Street going north into the Jackson Miles Abbott Wetland Refuge and also through the Accotink Bay Wildlife Refuge. These lines also are located in the forest and wildlife corridor.

Given that the underground lines are aged and portions may be in need of upgrade, the areas surrounding the lines are possibly corroded and the lines may be exposed.

4.12.4 Telecommunications

Telephone service at Fort Belvoir is provided by Bell Atlantic Telephone. The system is a mainframe interconnecting facility owned and operated by Bell Atlantic. The telephone system is adequate for present use and is expanded upon request, to meet additional equipment or use requirements.

4.12.5 Solid Waste

Fort Belvoir no longer landfills its solid waste on the installation. Solid waste is currently removed by a contract hauler to the Middle Peninsula Solid Waste Landfill. However, the installation has entered a new contract, and beginning in April 2000, solid waste will be hauled to the Lorton Solid Waste Management Facility's Energy Resources Recovery Facility in the Lorton area of Fairfax County. The exception is that construction and demolition debris is presently, and will continue to be, hauled to the Hilltop Landfill in Fairfax County. Fort Belvoir generates about 10,460 tons of solid waste per year that is disposed of and 3,135 tons of waste that is recycled (Werner, February 24, 2000).

4.12.6 Stormwater

Fort Belvoir's stormwater drainage system consists largely of open channels, which receive overland sheet flow, and source-point flows originating from individual site drainage systems. The open channels ultimately discharge to the post's watercourses. A system of catch basins is used to trap sediments and grit. These basins are cleaned twice a year. Oil/water separators are used at the motor pools and Davison Army Airfield. Street cleaning is performed every spring to remove sand and salt that accumulates during winter. A number of detention ponds serve single and multiple sites, and most new developments include stormwater management features.

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Commonwealth of Virginia codes require stormwater management quantity and quality (best management practices) controls. Also, Fort Belvoir complies with the Fairfax County building codes to the extent practicable. Building construction projects in Fairfax County must comply with stormwater regulations.

Section 402 of the Clean Water Act of 1977 established requirements for discharges of stormwater associated with industrial activity under the National Pollutant Discharge Elimination System (NPDES) permit program. Within the Commonwealth of Virginia, VDEQ administers the stormwater-permitting program under the Virginia Pollutant Discharge Elimination System (VPDES) permit program. The VPDES permit program governs any construction activity including clearing, grading, and excavation activities, except for operations that result in disturbance of less than five acres (two hectares) of total land area that is not part of a larger common plan of development or sale (DTRA, 2000).

4.12.7 Traffic and Transportation

Fort Belvoir is surrounded by a number of major arterial and freeway systems. The Fort is situated on the northern and southern sides of U.S. Route 1. Immediately west of the site lies Interstate 95 and the commuter rail corridor used by MARC and VRE. To the east of the site lies the Mount Vernon Parkway. All three routes provide convenient access to Washington DC.

4.13 Socioeconomic Conditions

4.13.1 Demographics

Census data from 1990 shows that the substantial metropolitan region has a population of over three million people, 1.3 million households, and a total housing supply of 1.4 million units (Table 4-4 below).

Fairfax County ranks as the county with the largest population in the region, as well as in the Commonwealth of Virginia as a whole (Fairfax County Website, January 2000). Table 4-5 below shows recent demographic trends: the growth of population in the county over the period 1980-90 from the US Census, with estimates and projections through 2005 (Fairfax County Website, January 2000). If the county forecast for 2000 is accurate, its population will have increased by 18 percent over the decade, compared to a 37 percent growth in the 1980s. The number of households is estimated to have increased by 20 percent over the 1990s, and housing units by 19 percent over the same period. Clearly, Fairfax County has experienced dramatic growth in recent decades, albeit at a more moderate rate in the 1990s. The racial/ethnic composition of the county has seen the relative growth of non-white groups over the 1990s, with particularly strong growth among Asians and Hispanics (Table 4-6 below).

Fort Belvoir is host to approximately 90 tenant organizations with about 21,000 direct military and civilian employees, and 4,000 dependents living on-post (Groeneveld, February 23, 2000).

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Table 4-4: Fort Belvoir Region Demographic Overview 1990

COUNTY	POPULATION	HOUSEHOLDS	HOUSING UNITS
Fairfax, VA	818,584	292,345	302,464
Prince William, VA	215,686	70,253	74,759
Fauquier, VA	48,741	16,484	17,716
Stafford, VA	61,236	19,443	20,529
King George, VA	13,527	4,795	5,280
Loudoun, VA	86,129	30,623	32,932
Arlington, VA	170,936	78,745	84,847
Montgomery, MD	757,027	282,903	295,723
Prince George's, MD	129,268	257,689	270,090
Charles, MD	101,154	32,934	34,487
Washington, DC	606,900	249,034	278,489
Totals:	3,009,188	1,335,248	1,417,316

SOURCE: US Census, 1990 (DTRA, 2000)

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Table 4.5: Fairfax County Demographics

<u>Year</u>	<u>Population</u>		<u>Households</u>		<u>Housing Units</u>	
	<u>Number</u>	<u>% Change¹</u>	<u>Number</u>	<u>% Change¹</u>	<u>Number</u>	<u>% Change¹</u>
1980	596,901	N/A	205,200	N/A	215,600	N/A
1990	818,584	37.1	292,345	42.5	302,464	40.3
1998	931,452	13.8	338,045	15.6	345,969	14.4
2000	966,137	3.7	351,742	4.1	359,568	3.9
2005	1,028,079	6.4	375,210	6.7	383,630	6.7
¹ Percent change from previous row data.						

Source: Fairfax County Website, January 2000.

Table 4-6: Fairfax County Racial /Ethnic Composition (Percent of Total Population)

<u>Race/Ethnicity</u>	<u>1990</u>	<u>1998</u>	<u>Percent Change</u>
White (Non-Hispanic)	77.4	66.7	-13.8
Black (Non-Hispanic)	7.6	8.2	7.9
Asian/Pacific Islander	8.3	13.1	57.8
Hispanic	6.3	9.5	50.8
Other	0.3	2.5	733.3

Source: Fairfax County Website, January 2000

4.13.2 Economics

The most recent data from the US Department of Labor, Bureau of Labor Statistics (BLS) reports unemployment for Fairfax County at 1.5 percent for November 1999, with 8,091 unemployed and 543,374 employed (US BLS, 2000).

The county reports that 51 percent of the county-resident workforce are employed in Fairfax County; the others work in DC (18.7 percent), elsewhere in Virginia (21 percent), Maryland (5 percent), and other places (4.3 percent) (Fairfax County, 1998). The county reports median household income in 1997 at \$72,000 and median family income at \$84,000.

It is clear that Fairfax County is a particularly affluent community with about 40 percent of its families earning incomes in excess of \$100,000 in 1997. The US Bureau of Economic Analysis (BEA) reports that in 1997 Fairfax (comprising Fairfax County, Fairfax City, and Falls Church) had a per capita personal income of \$39,951, ranking third in the state with 153 percent of the state average (\$26,109) and 158 percent of the national average (\$25,288) (US BEA, 1999).

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Census data on poverty status in 1989 (from the 1990 census) indicate that only 3.5 percent of all persons fell below the poverty level, or 2.2 percent of all families (DTRA, 2000).

4.13.3 Housing

The 1990 census recorded 307,966 total housing units in Fairfax County, of which one-third were built during the previous decade. In 1990, occupied housing accounted for 292,345 units, of which owner-occupied units accounted for 67.1 percent and renters the remaining 32.9 percent. The homeowner vacancy rate was 1.8 percent and the renter vacancy rate was 8.1 percent. The average number of persons per owner-occupied unit was 2.81, and of renter-occupied units, 2.62. In 1990, the average household size was 2.75 persons; the county estimates this to have fallen to 2.7 in 1998.

There are presently 2,062 military family housing units at Fort Belvoir. These are located mainly at the southern edge of the South Post, but also include Lewis Heights and Woodlawn Village at the eastern edge of North Post (Jones, February 15, 2000). In addition, there are barracks for 1,200 single enlisted personnel and 462 temporary quarters for visitors and new arrivals.

4.13.4 Schools, Libraries, and Recreation Facilities

Public services such as schools, libraries, and recreational facilities are provided throughout the Fort Belvoir area.

There is one school located on the installation - the Fort Belvoir Elementary School (grades K-6), on North Post at Meyers Road. It is a new 136,000 sq.ft. facility that opened in 1998 and is operated by the Fairfax County Public School system. The largest school in that system, there were 1,279 students enrolled in 1999. Students from Fort Belvoir attend this elementary school, the county's Walt Whitman Middle School, and the county's Mount Vernon High School. These latter facilities are located off-post, closer to Alexandria.

Public education in Fairfax County is administered by the elected 12-member school board and its appointed Superintendent of Schools. The school system is divided into three areas. Fort Belvoir is located in Area I, which covers the southern third of the county. Overall, there are 237 schools and centers in the system. The average cost per student is \$8,203. Projected enrollment for all Fairfax County schools for 1999-2000 is 155,993 students, with a total staff of 18,767 and operating budget of \$1,279 million. The match between capacity and enrollment varies by individual school; however, 20 of the 42 elementary schools are presently experiencing some level of excess enrollment, with a total of 546 students (2.3 percent) exceeding the rated capacity of 24,164.

Middle schools also vary by specific school, with four of seven recording some level of excess enrollment, but with overall totals below the rated capacity of 7,100. One of the seven high schools is presently experiencing an excess enrollment, of 46, but high schools as a whole have a substantial overall capacity remaining of 1,730. School-age family members residing at Fort Belvoir are currently enrolled in the Fairfax County School system and attend Barden, Markham, or Fort Belvoir Elementary schools on Post, and Whitman Middle School, and Mount Vernon

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High Schools located off Post. The Van Noy library, located on Post, serves the Fort Belvoir Military Community.

There are 125 community and family recreation activities located at Fort Belvoir; both active and passive indoor and outdoor recreation activities are available. Recreational facilities occupy 1,123 acres (454 hectares) of the installation in areas convenient to the population they serve. These facilities include (Horne Engineering, 2000):

- Clubs for officers and non-commissioned officers (NCOs);
- Nine-hole golf course on South Post, 36-hole golf course on Upper North Post;
- Tennis courts;
- Swimming pools;
- Athletic fields;
- An archery range;
- Three picnic areas;
- Several playgrounds;
- Six soccer fields;
- Two football fields;
- Several softball fields;
- Extensive walking and running areas;
- A youth services center with summer camp; and
- The Sosa Community Center, with a variety of recreational amenities.

In addition, the Dogue Creek marina rents boats and offers 105 wet slips and 300 dry-storage facilities, rented on an annual basis (Horne Engineering, 2000). Additional facilities at the marina include two boat-launch ramps, pump-out stations, and electric and water hookups. The Fairfax County Park Authority operates over 350 parks on more than 18,300 acres. Facilities include a horticulture center, a working farm, an activities/equestrian center, eight indoor recreational centers, five nature and visitor centers, eight golf courses, two campgrounds, an ice-skating rink, and a water park. A wide variety of activities and programs are operated at the county parks and recreational centers (DTRA, 2000).

4.13.5 Public Health and Safety

Safety and security issues at Fort Belvoir are handled by the Army's Military Police (MP) and Fire and Emergency Medical Services (EMS). The MP headquarters are on South Post at Pohick Road and 12th Street, and there are two additional MP stations: Unit 1 on South Post at Middleton Road and 21st Street and Unit 2 on North Post at Goethals Road and Black Road. There are three fire stations: No. 65 on South Post; No. 63 on North Post; and No. 66 at Davison Airfield. Five fire companies, with a total staff of 66, serve the installation (two crash companies serve Davison Airfield). At least 21 firefighters are on duty 24 hours a day. EMS personnel are trained at least to the level of emergency medical technician (EMT). The fire department fields three engines and one truck (Sullivan, February 17, 2000).

The Fairfax County Police Department provides public safety services throughout the county, with the exceptions of Fort Belvoir, several municipalities (e.g., Herndon, Alexandria, and

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Vienna), and Dulles Airport. It divides the county administratively into seven district stations that employ 1,050 officers supported by 400 civilian personnel. A total of 168,038 crimes and accidents were reported in Fairfax County in 1998, with overall response times averaging 16 minutes. Response times vary by priority, with Priority 1 incidents averaging 6.5 minutes. In 1998, the index crime rate for violent crimes per 100,000 population was 97, and for property crimes 2,539 reflecting general decreases from 1997 (Fairfax County Website, February 2000).

The Fairfax County Fire and Rescue Department is a combined career and volunteer organization providing fire suppression, rescue, and EMS, among other functions. It employs 1,139 uniformed staff and 85 civilian staff, and includes 384 operational volunteers and 533 administrative volunteers. Services are provided from 34 stations, strategically located throughout the county. Those stations closest to Fort Belvoir are Woodlawn, Lorton, Gunston, and Kingstowne. Throughout the county in FY 1999, the department attended 20,793 fire suppression incidents, 52,794 EMS calls, and 4,112 other public service calls. The department fields 34 fire engines, 12 paramedic trucks, and 18 ambulances. The department operates with a \$89,618,803 (FY 2000) budget (DTRA, 2000).

4.13.6 Noise

The major sources of noise at Fort Belvoir include aircraft arrivals and departures from Washington National Airport, Davidson Airfield and vehicular traffic both on Post and on adjacent streets and highways. Military helicopters and ceremonial activities also contribute to the noise level on Post. Helicopter activities may cause short periods of speech interference both indoors and outdoors; however, helicopter noise is minimized in accordance with MDW Supplement 1 to AR 95-1 governing helicopter operations. These noise sources contribute to the background ambient levels on Post but do not constitute a hazard to the health of installation personnel.

To model noise generated by aircraft and ground activities, DNL contours have been developed for Davison Army Airfield. The Federal Interagency Committee on Noise (FICON) has identified the 65 dB DNL as appropriate for assessing aircraft and other noise impacts on residential land uses (FICON, 1992). At present, DNLs from average “busy day” aircraft operations do not exceed 65 dB outside the Fort Belvoir or Davison Army Airfield boundaries (DTRA, 2000).

The Fairfax County Noise Ordinance specifies a maximum sound level of 55 decibels for stationary noise sources in residential areas. It is estimated from available data, and from knowledge of the noise sources on Post, that the 55-decibel criterion is met at Fort Belvoir. Additionally, sound levels near housing units for officers and families fall well below the upper limit of noise level guidelines established by U.S. Housing and Urban Development (HUD) for new housing locations, as well as within the U.S. Environmental Protection Agency guidelines for residential environments.

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4.13.7 Visual and Aesthetic Values

The aesthetic qualities at Fort Belvoir are primarily associated with the vistas of the Potomac River. In addition, the many historic structures located along tree-lined streets in the southeastern section of the Post further enhance its aesthetic value.

Fort Belvoir possesses a restricted development zone, consisting of woods, open fields, and parking lots, that was created to protect the visual integrity of Mount Vernon from any development within Fort Belvoir that could extend above the existing treeline and affect views from the east. Currently, there are structures in the restricted development zone, but they are not tall enough to intrude on the view.

4.14 Environmental Justice

Executive Order 12898 requires Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

Table 4-7(*development in progress*) presents demographic information on race, ethnicity, and poverty status in the areas surrounding Fort Belvoir, as a baseline on which any such effects can be identified and analyzed.

Race refers to census respondents' self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American. As defined by the "Draft Guidance For Addressing Environmental Justice Under NEPA" (CEQ, 1996), "minority" includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin), or Hispanic. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau's statistical poverty threshold, which is based on income and family size. The Census Bureau defines a "poverty area" as a census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level .

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Table 4-7: Census Figures and Economic Profile for Fort Belvoir and Surrounding Area Residents, By Zip Code

ZIP Code							
PERSONS							
White							
Non-White							
Above Poverty Level							
Below Poverty Level							
HOUSEHOLDS							
Receiving Public Assistance							
Not Receiving Public Assistance							
Median Household Income							

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5.0 ENVIRONMENTAL CONSEQUENCES

The subsections below describe the effects upon the natural and man-made environment associated with implementation of the proposed action. The evaluation of effects is based upon the assumption that the non-Federal entity would be responsible for ensuring that all actions or practices involving future expansion, maintenance, and upgrades of the utilities would comply with applicable Federal and state and local environmental laws and regulations. The no-action alternative would have no impacts to the resources presented in the subsections below.

The proposed action is envisioned as a two part initiative: part one is the actual contractual transfer of responsibilities from the Federal Government to the non-Federal entity, and part two is the ongoing responsibility of the non-Federal entity to operate and maintain the Belvoir UDC systems, and expand these systems as future operational needs may require. Operation and maintenance will not modify the existing capacity of the systems. Therefore, these activities essentially result in no net change to the current natural and man-made environment. Expansion, however, implies an inherent change in supplied service that is a result of an increase in demand most likely to be expected from future building construction. Expansion of the services currently provided to the installation will result in some impact to the natural and man-made environment. The magnitude of these effects can be estimated by data such as the installation's 5-year Master Plan, which will be made available to all prospective offerors.

Expansion of the existing UDC systems, if and when it occurs, would be considered a Federal action, and would first require all environmental, cultural and other coordination with the installation and MDW to be performed before initiation of any physical work. The following paragraphs address impacts associated with expected UDC system expansion in a general sense, and do not attempt to identify specific instances.

The following list of resources was evaluated and it was determined that the proposed action would have no impact or appreciable detrimental effect on them:

- Land Use
- Geology
- Climate
- Aquatic Resources and Wetlands
- Threatened and Endangered Species
- Prime and Unique Farmlands
- Wild and Scenic Rivers
- Telecommunications
- Solid Waste
- Stormwater
- Demographics
- Housing
- Schools, Libraries and Recreational Facilities
- Environmental Justice

Therefore, the impacts to these resources will not be addressed further by this EA.

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5.1 Project Area Description

5.1.1 Soils

No significant adverse effects upon soils would be expected as a result of the proposed action. Future utility upgrades, expansion, or replacements may temporarily effect soils within the existing easement areas. However, these soils were likely disturbed during the construction of the existing utilities, and would be subject to further disturbance in the normal course of repairing or maintaining these existing systems. Concerns regarding the protection of the integrity of surface and topsoil would be addressed during subsequent evaluation of the non-Federal entity's engineering designs. Notes that recommend the non-Federal entity installing underground utilities to sort, stockpile, and replace the top 12 inches of soil would normally be shown on the design plans or included in the special provisions of construction specifications.

5.1.2 Topography and Drainage

The proposed action would not be expected to have an effect on the topography and drainage at Fort Belvoir. Any utility upgrade or replacement may temporarily effect a small area within the existing easements, but these disturbances would be restored to their existing grades when construction is complete. Expansion of the utilities systems outside the existing easements is not specifically addressed as part of this EA, and would require further environmental evaluation if it were to be proposed in the future.

5.2 Air Quality

Implementation of the proposed action would transfer the responsibility for utilities operations from the Government to a non-Federal entity and would be expected to have no measurable impact on air quality in the Fort Belvoir area. Currently, Fort Belvoir already receives electric, water, and wastewater services from outside vendors, so the transfer of these services would be a paper transaction only. Furthermore, any proposed upgrade, expansion, or replacement would be performed to improve efficiency, provide for safety, or as a repair. No foreseeable changes would be done to any of these systems based on an increase in demand. Therefore, it would be expected that there would be no significant increase or decrease in air emissions in the project area as a result of the privatization of the Belvoir UDC systems.

5.3 Vegetation

Implementation of the proposed action would be expected to have minimal or no measurable impact upon the quality or composition of the vegetation at Fort Belvoir. Currently, the installation receives electric, water, and wastewater services from outside vendors, so the transfer of these services would be a paper transaction only. Furthermore, any proposed upgrade, repair, or replacement would be performed to improve efficiency, provide for safety, or as a repair. Any upgrade or expansion of service may cause minor, local damage to or removal of vegetation as a result of the excavation necessary for line access. Vegetation within the developed portions of Fort Belvoir is primarily grass and ornamental plantings, which can easily be replanted when the access trenches are backfilled. Vegetation within environmentally protected or sensitive areas

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that are traversed by existing UDC systems would be similarly subject to short-term disruption, and would be replanted at the end of any repair or construction effort. No long-term foreseeable changes would be expected to be evident in any of these systems as a response to a regular increase in demand, as the utilities are either elevated or run underground, and would not require any vegetation removal except for maintenance or construction. For these reasons, it is expected that there would be minimal to no significant impact on vegetative habitat within the installation project area as a result of the utility privatization.

5.4 Wildlife Resources

Implementation of the proposed action would similarly be expected to have minimal, short-term impact on wildlife resources in the Fort Belvoir area. Currently, Fort Belvoir receives electric, natural gas, water, and wastewater services from outside vendors, so the transfer of these services would be a paper transaction only. Furthermore, any proposed upgrade or replacement would be performed to improve efficiency, provide for safety, or as a repair. No foreseeable changes would be evident in any of these systems as a response to a regular increase in demand, as the utilities run underground, and would not require any vegetation removal except for maintenance or construction. Potential impacts to wildlife resources in environmentally protected or sensitive areas that are traversed by existing UDC systems would be expected to be short-term, resulting from required short-term duration of repair or replacement of portions of UDC systems in poor or failing condition. For these reasons, it is expected that there would be minimal to no significant impact on wildlife or wildlife habitat within the installation project area as a result of the utility privatization.

5.5 Cultural Resources

The proposed action would involve the transfer of ownership and the responsibility to operate and maintain the UDC systems on Fort Belvoir. No significant adverse effects on cultural resources are expected to occur as a result of the proposed action. The only foreseeable effects of the proposed action on these resources are secondary, specifically the effects of anticipated construction activity by the non-Federal entity responsible for upgrading, repairing or replacing the existing utility systems.

5.5.1 Archeological Resources

Land occupied by the existing utility system has been previously disturbed by the installation of the utility system and is expected to have little potential to contain archeological resources. Any ground disturbance action taken outside existing easements would likely increase the potential for impacting undiscovered archeological resources. A Phase I archeological survey has been completed at Fort Belvoir so the known and the potential for unknown sites on the installation are well documented. There are numerous archeological sites recorded at Fort Belvoir and avoidance would be the first strategy to preserve the known sites. If known sites must be impacted, on site monitoring during soil disturbing activities, or a data recovery excavation would be conducted as mitigation.

National Historic Preservation Act (NHPA) Section 106 consultation with the Virginia SHPO has been initiated. A project initiation meeting was coordinated by MDW and held in June 1999

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with the Virginia SHPO and other regulatory authorities attending. A letter formally initiating consultation with the SHPO was sent on July 7, 1999. A follow-up letter transmitting this EA and findings is being prepared for the SHPO. The results of the consultation will be incorporated into the final version of this document.

5.5.2 Architectural Resources

As described in Section 5.5.1, Section 106 consultation with the Virginia SHPO has been initiated. The results of the consultation will be incorporated into the final version of this document.

5.6 Hazardous, Toxic, and Radioactive Substances (HTRS)

Because the proposed action is not expected to materially change current operations and maintenance procedures at Fort Belvoir, no new sources of hazardous or toxic materials would be expected to be generated occur from their normal operations. Prior to excavation, which might be required to expand facilities, information regarding the known distribution and status of contaminated sites would need to be reviewed so that these improvements could be safely implemented. Therefore, no impacts would be anticipated from hazardous and toxic materials as a result of the proposed action.

5.7 Infrastructure

5.7.1 Utilities

Prior to contract award, the existing supply and service agreements between the Government and the various utility companies will need to be reviewed by the appropriate Government legal offices to ensure that they contain no clauses that would preclude or unduly hinder transfer of ownership, operation and maintenance of UDC systems under this privatization initiative. Certain existing contracts may need modification, or new contracts may need to be drafted to convey rights and easements to the Federal properties at Fort Belvoir. Although the full ramifications of these actions are not fully known, initial contact with representatives at Fort Belvoir has indicated that no unresolvable issues are anticipated and that preparation of an easement(s) agreement should not be encumbered by pre-existing conditions.

Under certain circumstances, utility companies may have already obtained easements to construct and maintain infrastructure within the installation boundaries, but these utilities serve specially designated installation tenants or customers at locations outside the installation boundaries. Portions of the UDC systems within these existing easements are not part of the Government's current privatization initiative.

5.7.1.1 Electric

Virginia Power currently supplies electric power to Fort Belvoir. Implementing the proposed action would result in the successful non-Federal entity taking over the responsibility for the distribution system within the Fort Belvoir installation. This is a transfer of ownership of the distribution system only, and would not affect the procurement or delivery of the electric power commodity. Therefore, no interruption in service would be anticipated because of this action. Subsequent improvements to the electric distribution system may require brief power

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interruption as new cables are brought on-line. These disruptions would most likely be pre-arranged, should they be necessary, thus reducing their impact. Once upgrades are performed, the likelihood of power interruption should be reduced from present levels, due to the improved quality of the distribution system. Therefore, no significant impact would be expected to the electric distribution system.

5.7.1.2 Water

Fairfax County Department of Public Works (DPW) currently supplies potable water for Fort Belvoir. As a result of the proposed action, the successful non-Federal entity would take on the responsibility for the operation and maintenance of the water distribution system within the Fort Belvoir installation. This is a transfer of ownership of the distribution system only, and would not affect the procurement or delivery of the water commodity. Therefore, no interruption in service would be anticipated because of this action. Subsequent improvements to the distribution system may require brief water shutoffs and interruption of flow as new pipes are brought on-line. These disruptions would most likely be pre-arranged, should they be necessary, thus reducing their impact. Therefore, no significant impact would be expected to the water distribution system.

5.7.1.3 Wastewater

Fairfax County DPW currently provides for collection and treatment of wastewater at Fort Belvoir. As a result of the proposed action, the successful non-Federal entity would take on the responsibility for the operation and maintenance of the wastewater collection system within the Fort Belvoir installation. Therefore, no interruption in service would be anticipated because of this action. Subsequent improvements to the wastewater collection system may require brief interruptions of effluent flow as new pipes are brought on-line. These disruptions would most likely be pre-arranged, should they be necessary, thus reducing their impact. Therefore, no significant impact would be expected to the wastewater distribution system.

5.7.2 Traffic and Transportation

Minor increases in traffic volume would be expected as a result of implementing the proposed action. Traffic volume, however, would be anticipated to involve few vehicles (those of construction crewmembers, those of the utility non-Federal entity's engineers) and would be temporary. No increase in traffic would be anticipated as a result of the proposed action. Therefore, no significant traffic impact would be anticipated as a result of the proposed project.

5.8 Socioeconomic Conditions

5.8.1 Economics

Implementation of the proposed privatization action would have a very minor impact on the local economy. The successful non-Federal entity would become the outright owner of the utility distribution system on Fort Belvoir, and would, therefore, be entirely fiscally responsible for their maintenance and operation.

It is anticipated that the Government would experience an economic benefit from the privatization of the utility in the form of lowered cost per unit of energy. This benefit would

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arise through elimination of the operation and maintenance (O&M) and administrative and general costs associated with operation of the utility, and the capital expenditures for improvements. The cost of O&M and capital improvements would be assumed by the service provider and would be included as part of the per-unit cost of the energy. There is a possibility that the privatization may result in the loss of up to five full-time-equivalent (FTE) personnel from the Fort Belvoir DIS payroll.

5.8.2 Public Health and Safety

Implementation of the proposed action would not be expected to have significant effect upon the public health and safety. Currently, Fort Belvoir receives UDC services from an outside vendor. The transfer of these services would be a paper transaction only. Any utility upgrade or replacement may temporarily effect a small area within the existing easements, but these disturbances would be restored to their existing grades when construction is complete. It is expected that all future construction activities would be performed following OSHA guidelines, which mandate acceptable health and safety standards.

5.8.3 Noise

Implementation of the proposed action would not be expected to have a significant effect upon existing noise levels. Currently, Fort Belvoir receives UDC services from an outside vendor. The transfer of these services would be a paper transaction only. Any utility upgrade or replacement might temporarily effect a small area within the existing easements and would be performed to improve efficiency, provide for safety, or as a repair. It is expected that noise levels associated with this construction would be temporary.

5.8.4 Visual and Aesthetic Values

The proposed privatization is a transfer of ownership only as regards visual and aesthetic concerns. Any physical construction occurring within the easements to be granted for the proposed action is covered by this EA. Any potential work outside the easements to be granted would have to be approved, and would be subject to additional environmental, regulatory, or installation ordinances. It is expected that only minimal, temporary effects on Fort Belvoir's visual or aesthetic values would result from the proposed action. Once any construction is complete, the visual and aesthetic values would be restored to their previous condition, as coordinated with the Government.

5.9 Cumulative Impacts

5.9.1 Impacts on the Natural Environment

The proposed action would result in the transfer of ownership of the electrical, potable water, and wastewater distribution systems to the successful non-Federal entity. It would also transfer responsibility to this entity to repair, upgrade or replace the existing utility infrastructure within an expected period of 3 to 5 years so as to be able to operate and maintain this system to necessary, prescribed industry standards. Foreseeable effects of the proposed action on these resources would be considered secondary, specifically the effects of temporary construction

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activities associated with the upgrade, repair, expansion, or replacement of all or parts of these utility distribution systems.

Potential future utility infrastructure improvements, including expansion or upgrade of the utility distribution systems, would most likely have impacts on soils and local air quality. These impacts would be associated with repair, upgrading or constructing new UDC systems. These effects would not be expected to be large, “either singly” or cumulatively. Additionally, deed restrictions that would be applied to all easements granted for existing utility lines would be expected to reduce foreseeable impacts to (1) water supply and quality, (2) aquatic resources, and (3) cultural resources at Fort Belvoir. This reduction of impacts would be expected to reduce the overall cumulative impact to within reasonable limits.

5.9.2 Impacts on the Human Environment

The privatization of the electrical distribution system may, in the worst-case scenario, result in the loss of up to five full-time-equivalent (FTE) personnel from Fort Belvoir’s payroll. Fort Belvoir’s DIS presently has oversight control over a private contractor who is responsible for the operation and maintenance of UDC systems. The Belvoir FTEs primarily assigned to this role may retain their current responsibilities, be reassigned within the DIS workforce or be counseled as to where to apply for comparable employment, should no positions be available within the organization. It would be expected that the non-Federal entity would seek to employ those qualified individuals possessing knowledge of these systems and that any displaced individuals would have a first chance at obtaining comparable employment with no break in pay or benefits. In less than ideal conditions, some individuals would not be able to find suitable employment within the severance period. This situation, however, would not be permanent, and the cumulative economic impacts of temporary unemployment would not likely be significant.

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6.0 CONCLUSIONS AND FINDINGS

This EA addressed the privatization of the electric, water and wastewater utility distribution and collection (UDC) systems on the Fort Belvoir. The proposed action and the no-action alternative have been reviewed in accordance with NEPA, as implemented by the regulations of the CEQ and AR 200-2. Baseline environmental and socioeconomic conditions at Fort Belvoir and the surrounding areas have been described and the environmental and socioeconomic consequences of implementing the proposed actions have been evaluated. A table summarizing the effects of the proposed action and the no-action alternative on environmental resources, as documented in detail in section 5.0, is provided below.

Table 6-1. Summary of Effects of Proposed Actions and Alternatives		
Resource	Proposed Action	No-Action Alternative
Land Use	No Impact.	No Impact.
Geology	No Impact.	No Impact.
Soils	Minor Temporary Impacts.	No Impact.
Topography and Drainage	Minor Temporary Impacts.	No Impact.
Climate	No Impact.	No Impact.
Air Quality	Minor Temporary Impacts.	No Impact.
Surface Water	No Impact.	No Impact.
Groundwater	No Impact.	No Impact.
Aquatic Resources and Wetlands	No Impact.	No Impact.
Vegetation	Minor Temporary Impacts.	No Impact.
Wildlife Resources	Minor Temporary Impacts.	No Impact.
Threatened and Endangered Species	No Impact.	No Impact.
Prime and Unique Farmlands	No Impact.	No Impact.
Wild and Scenic Rivers	No Impact.	No Impact.
Archeological Resources	Minor Temporary Impacts.	No Impact.
Architectural Resources	Minor Temporary Impacts.	No Impact.
Hazardous, Toxic and Radioactive Substances	Minor Temporary Impacts.	No Impact.
Electric	Minor Temporary Impacts.	Possible Impacts.
Potable Water	Minor Temporary Impacts.	Possible Impacts.
Wastewater	Minor Temporary Impacts.	Possible Impacts.
Telecommunications	No Impact.	No Impact.
Solid Waste	No Impact.	No Impact.
Stormwater	No Impact.	No Impact.
Traffic and Transportation	Minor Temporary Impacts.	No Impact.
Demographics	No Impact.	No Impact.
Economics	Minor impacts.	No Impact.
Housing	No Impact.	No Impact.
Schools, Libraries and Recreational Facilities	No Impact.	No Impact.
Public Health and Safety	Minor Temporary Impacts.	Possible Impacts.
Noise	Minor Temporary Impacts.	No Impact.
Visual and Aesthetic Values	Minor Temporary Impacts.	No Impact.
Environmental Justice	No Impact.	No Impact.

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Department of Defense (DoD) has directed and Department of the Army (DA) has issued implementing guidance to major commands and subordinate installations to pursue privatization of UDC systems as a prudent means to transfer the responsibility of ownership, and operation and maintenance of these systems to the non-Federal sector. Privatization of UDC systems is envisioned as the means for the military services to obtain more efficient delivery of utility services and to be able to standardize maintenance and operation of these systems as commonly applicable and prescribed in the non-Federal sector. Fort Belvoir's aging UDC system infrastructure is in need of repair, upgrade and/or replacement. Through privatization of its UDC systems, the Government would be able to effect these infrastructure improvements as timely as possible. For these reasons, the Government is pursuing privatization of its Belvoir UDC systems at this time.

Selection of the no-action alternative, or not privatizing the Belvoir UDC systems, would not satisfy the need to provide capital improvements to those existing systems or portions of systems in poor condition. It would also not would it comply with DoD directives and DA policy to privatize UDC systems to the maximum extent. Therefore, the no-action alternative is not preferred.

Impacts to natural resources from implementing the proposed action would be expected to be minor, and be primarily associated with UDC systems infrastructure repair or replacement. Short-term impacts consisting of dust and emissions, soil disturbance, equipment noise and damage to vegetation, and disruption to wildlife patterns and habitat can be expected within the utility line easements from the use of construction equipment. Implementing the proposed action would be expected to shorten the overall duration of construction activities that would have had to be performed by the Government to keep the UDC systems in satisfactory operation. As such, no long-term impact and, collectively, no significant impact on natural resources is anticipated.

Impacts to cultural resources from implementing the proposed action are likely to be minor, and temporary. No impacts would be expected to historic structures, as no infrastructure work would be performed within any building footprint. Ground disturbance, even within existing utility easements, has the potential for uncovering archaeological or historically significant artifacts. The non-Federal owner would be required to comply with all installation guidelines and procedures for managing and protecting cultural resources prior to initiating any excavation or other disturbance of ground. As such, no significant impacts are expected to the architectural, visual and aesthetic features within the overall Fort Belvoir listed and eligible historic district.

Impacts to socioeconomic conditions from implementing the proposed action would be expected to be minor, and associated with the potential loss of operations and maintenance personnel positions and minor impact of infrastructure construction expenditures. Privatization of the Belvoir UDC systems may result in the loss of up to five FTE DIS workforce personnel. These individuals would be provided with job placement services available. Under ideal conditions, each individual would be able to find comparable employment with no break in pay or benefits. In less than ideal conditions, some individuals would not be able to find suitable employment within the severance period. This situation, however, is not permanent, and the cumulative

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economic impacts of temporary unemployment are not likely to be significant. Short-term increases in construction expenditures associated with infrastructure improvements on Fort Belvoir are not expected to represent a significant change in the local economy, considering the level of construction activity present and anticipated in the surrounding metropolitan area.

The implementation of the proposed action consists of transfer of ownership of Belvoir UDC systems, and transfer of responsibility to operate and maintain these systems, from the Federal Government to a non-Federal entity. Implementing the proposed action to privatize Belvoir UDC systems would not significantly alter baseline environmental or socioeconomic conditions. Because the proposed action would not have a significant effect on the quality of the human environment, no environmental impact statement will be prepared, and a Finding of No Significant Impact will be published in accordance with 40 Code of Federal Regulations 1500 and Army Regulation 200-2.

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7.0 REFERENCES

- Fort Belvoir (1999). *Environmental Assessment, Barracks Renovation, Fort Belvoir, Fairfax, Virginia*. Prepared by U.S. Army Corps of Engineers, Baltimore District.
- U.S. Army Military District of Washington (1991). *DRAFT Environmental Assessment, Existing Conditions Report, Fort Belvoir, Fairfax County, Virginia*. Prepared by U.S. Army Corps of Engineers, Baltimore District.
- Fort Belvoir (1991). *Wetlands Delineation at Fort Belvoir, Virginia*. Prepared by CH2M Hill, Inc.
- Fort Belvoir (1993). *Real Property Master Plan Fort Belvoir Long-Range Component*. Prepared by Woolpert.
- Fort Belvoir (2000). *Environmental Assessment Temporary Relocation of the Defense Threat Reduction Agency to Fort Belvoir, Virginia*. Prepared by TAMS Consultants, Inc.
- Fort Belvoir (2000). *Environmental Assessment for the Implementation of an Oral Rabies Vaccination Program, Fort Belvoir, Virginia*. Prepared by TAMS Consultants, Inc.

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List of Acronyms and Abbreviations

ACHP	Advisory Council on Historic Preservation
AR	Army Regulation
ARRP	Army Radon Reduction Program
AST	Aboveground Storage Tank
BEA	Bureau of Economic Analysis
BGE	Baltimore Gas and Electric
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRMP	Cultural Resource Management Plan
DINFOS	Defense Information School
DoD	Department of Defense
DPW	Directorate of Public Works
DRID	Defense Reform Initiative Directive
DRMO	Defense Reutilization and Marketing Office
DTRA	Temporary Location of the Defense Threat Reduction Agency EA
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EMO	Environmental Management Office
EPA	United States Environmental Protection Agency
EPG	Engineer Proving Grounds
ETL	Engineering Technical Letter
FAR	Federal Acquisition Regulation
FNSI	Finding of No Significant Impact
FTE	Full Time Equivalent
FWS	United States Fish and Wildlife Service
FY	Fiscal Year
HAZMAT	Hazardous Material
HECSA	Humphrey's Engineer Center Support Activity
HTRS	Hazardous, Toxic and Radioactive Substances
ISCP	Installation Spill Contingency Plan
LBP	Lead Based Paint
MD DNR	Maryland Department of Natural Resources
MDE	Maryland Department of the Environment
MDW	Military District of Washington
Mg/L	Milligrams Per Liter
MGD	Million Gallons Per Day
MSDS	Material Safety Data Sheet
MSL	Mean Sea Level
MTA	Maryland Transportation Authority
NCR	National Capital Region
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NESHAP	National Emissions Standards for Hazardous Air Pollutants

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List of Acronyms and Abbreviations (con't)

NO ₂	Nitrogen Dioxide
NRHP	National Register of Historic Places
NSA	National Security Agency
O ₃	Ozone
ORVP	Implementation of an Oral Rabies Vaccination Program EA
PA	Programmatic Agreement
Pb	Lead
PCB	Polychlorinated Biphenyl
PCi/L	Picocuries Per Liter
PM-10	Particulate Matter-10 Microns
POC	Point of Contact
PPM	Parts Per Million
PVC	Poly-Vinyl Chloride
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal
RPMP	Real Property Master Plan
SHPO	State Historic Preservation Office
SO ₂	Sulfur Dioxide
USACE	U.S. Army Corps of Engineers
USAEHA	U.S. Army Environmental Hygiene Agency
USAR	United States Army Reserve
USC	United States Code
UST	Underground Storage Tank